

Journal 6.8

Access DB# 87595

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: POSS ECHOLS Examiner #: 59765 Date: 2/26/83
Art Unit: 3726 Phone Number 308-802 Serial Number: 09/864064
Mail Box and Bldg/Room Location: LP-2-5A11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: May 23, 01

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Casting a housing (a differential housing, hub, case, casing) around at least part of a gear (ring gear).
The already made gear is fitted into a section of the mold & the casting material is poured into the mold around the gear, thus forming a single piece (gear + housing).
Currently housing is made separately & attached w/ nuts & bolts. The 2 pieces (gear & housing) are not formed together as you shouldn't use same material for both.

Specifically the invention is a ring gear w/ differential housing used ~~in~~ vehicle axle (turning motion from transmission into rotation of the tires). But search for any gear + housing for any purpose.

433A000

STAFF USE ONLY

Searcher: JEANNE HARRIGAN

Searcher Phone #: 305-5934

Searcher Location: CP2-2008

Date Searcher Picked Up: 2/27

Date Completed: 2/28

Searcher Prep & Review Time: 158

Clerical Prep Time: _____

Online Time: 87

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) _____

Bibliographic ☒

Litigation _____

Fulltext ☒

Patent Family _____

Other _____

Vendors and cost where applicable

STN ☒

Dialog ☒

Questel/Orbit _____

Dr. Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

Other (specify) _____

February 28, 2003

TO: Poss Echols, Art Unit 3726
CP2, Room 5-A-11

FROM: Jeanne Horrigan
ASRC Searcher in EIC3700 *JH*

SUBJECT: Search Results for Serial 09/864064

Attached are the search results for the Casting a differential housing around a ring gear, including results of inventor and prior art searches in foreign/international patent databases and prior art searches in automotive, manufacturing, and engineering non-patent literature databases.

The results are organized into three sets:

- Results of inventor search in foreign/international patent databases;
- Results of prior art search in foreign/international patent databases; and
- Results of non-patent literature search.

Results appear after the database names and search strategy used for those results. I tagged items that I thought seemed most relevant, but **I suggest that you review all of the results.**

Also attached is a search feedback form. Completion of the form is voluntary. Your completing this form would help us improve our search services.

I hope the attached information is useful. Please feel free to contact me (phone 305-5934 or email jeanne.horrigan@uspto.gov) if you have any questions or need additional searching on this application.

305-5934

Searcher: Jeanne Horrigan

1

February 28, 2003

Serial 09/864064

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200313

File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)

File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	14	AU='BELL D K'
S2	8	AU='BELL DALE' OR AU='BELL DALE K'
S3	22	S1:S2
S4	7295	RING() GEAR
S5	2	S3 AND S4

5/26,TI/2 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

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06828553

DEVICE FOR CONTROLLING LIQUID LEVEL OF LUBRICANT OF GEAR AS FUNCTION OF SPEED

5/7/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015051130 **Image available**

WPI Acc No: 2003-111646/200310

Differential assembly forming method for use in axle involves casting differential case around portion of ring gear

Patent Assignee: BELL D K (BELL-I)

Inventor: BELL D K

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020174740	A1	20021128	US 2001864064	A	20010523	200310 B

Priority Applications (No Type Date): US 2001864064 A 20010523

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020174740	A1		4	F16H-057/02	

Abstract (Basic): US 20020174740 A1

NOVELTY - The method entails casting a differential case (12) around a portion of a **ring gear** (26) to form the differential assembly (10).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a differential assembly.

USE - For use in axle.

ADVANTAGE - **Ring gear** may be constructed from forged steel and differential case may be constructed from ductile iron. Fasteners are not required.

DESCRIPTION OF DRAWING(S) - The figure is a cross-sectional view of a differential assembly.

Differential assembly (10)

Differential case (12)

Ring gear (26)

pp; 4 DwgNo 1/2

Derwent Class: P52; Q64

International Patent Class (Main): F16H-057/02

International Patent Class (Additional): B21K-003/00

Searcher: Jeanne Horrigan

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February 28, 2003

Serial 09/864064

File 348:EUROPEAN PATENTS 1978-2003/Feb W03

File 349:PCT FULLTEXT 1979-2002/UB=20030220,UT=20030213

Set	Items	Description
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S1	1	AU='BELL DALE K'
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1/6/1 (Item 1 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

01426858

Driveline Cooling System

February 28, 2003

Serial 09/864064

File 6:NTIS 1964-2003/Feb W4
 File 8:Ei Compendex(R) 1970-2003/Feb W3
 File 63:Transport Res(TRIS) 1970-2003/Jan
 File 65:Inside Conferences 1993-2003/Feb W4
 File 94:JICST-EPlus 1985-2003/Feb W4
 File 34:SciSearch(R) Cited Ref Sci 1990-2003/Feb W3
 File 35:Dissertation Abs Online 1861-2003/Feb
 File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
 File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Jan
 File 144:Pascal 1973-2003/Feb W3
 File 30:AsiaPacific 1985-2003/Feb 03
 File 96:FLUIDEX 1972-2003/Feb
 File 111:TGG Natl.Newspaper Index(SM) 1979-2003/Feb 25
 File 553:Wilson Bus. Abs. FullText 1982-2003/Jan

Set	Items	Description
S1	256319	CAST OR CASTS OR CASTING? ?
S2	2841233	FORM OR FORMS OR FORMED OR FORMING
S3	3781200	HOUSING? ? OR HUB OR HUBS OR CASING? ? OR CASE OR CASES
S4	97651	GEAR OR GEARS
S5	355	RING() GEAR? ? OR RING() SHAPE? ?() GEAR? ?
S6	919986	DIFFERENTIAL
S7	2333600	SINGLE OR UNITARY OR INTEGRAL
S8	0	S5 (S) S6() S3
S9	0	S5 AND S6(2W) S3
S10	644	S4(S) S3(S) S1:S2
S11	69	S7(S) S10
S12	56	RD (unique items)
S13	2	S12/2003 OR S12/2002
S14	54	S12 NOT S13
S15	54	Sort S14/ALL/PY,D
S16	7	S1:S2(3N) S3 AND S14
S17	7	Sort S16/ALL/PD,D
S18	722673	S1:S2/TI,DE
S19	136	S10 AND S18
S20	40	S1:S2(5N) S3 AND S19
S21	39	S20 NOT S16
S22	33	RD (unique items)
S23	1	S22/2003 OR S22/2002
S24	32	S22 NOT S23
S25	49	S5 AND S3
S26	4	S6 AND S25
S27	4	RD (unique items)
S28	3	S25 AND S1:S2/TI,DE
S29	3	S28 NOT S26

17/6/2 (Item 2 from file: 96)

00083089 FLUIDEX NO: 0089762 SUBFILE: T

The GfT Code of Practice 'Gearwheel and gearbox lubrication'.

Schmiertechnik Tribologie, vol.27, no.2, 1980, p.51-54., 1980

17/6/4 (Item 4 from file: 8)

05003227

Title: Calcul du bruit rayonne par les carters des transmissions a engrenages: Methode et applications

Title: Noise prediction of the housings of gearboxes: Method and applications

Publication Year: 1998

17/6/7 (Item 7 from file: 8)

00494843

Title: NEW CONCEPT IN SCREW COMPRESSORS.

Publication Year: 1975

24/8/1 (Item 1 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
05935207

Title: Dynamic forging of splines and spur gear forms : A modified upper bound analysis that includes the effects of inertia and some experiments

Publication Year: 2001

Descriptors: *Forging; Splines; Spur gears; Dynamic loads; Tellurium compounds; Deformation; Impact testing; Ductility; Stresses; Strain

Identifiers: Dynamic forging; Inertia forces; Solid cylindrical billets; Tellurium lead; Dropweight impact; Modified upper bound analysis

Classification Codes:

535.2.2 (Metal Forming Practice)

535.2 (Metal Forming); 601.2 (Machine Components); 408.1 (Structural Design, General); 804.2 (Inorganic Compounds); 422.2 (Test Methods); 931.2 (Physical Properties of Gases, Liquids & Solids)

535 (Rolling, Forging & Forming); 601 (Mechanical Design); 408 (Structural Design); 804 (Chemical Products Generally); 422 (Strength of Building Materials; Test Equipment & Methods); 931 (Applied Physics Generally)

53 (METALLURGICAL ENGINEERING, GENERAL); 60 (MECHANICAL ENGINEERING, GENERAL); 40 (CIVIL ENGINEERING, GENERAL); 80 (CHEMICAL ENGINEERING, GENERAL); 42 (BUILDING MATERIALS PROPERTIES & TESTING); 93 (ENGINEERING PHYSICS)

24/8/2 (Item 2 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
04349959

Title: Einfluss von Giessverfahren und Giessquerschnitt auf die Unrundheit

Publication Year: 1995

Descriptors: Steel; Metal casting ; Heat treatment; Steel castings ; Continuous casting ; Hardening; Fast Fourier transforms

Identifiers: Case hardening steel; Ingot casting ; Fast Fourier analysis; Homogenization

Classification Codes:

545.3 (Steel); 534.2 (Foundry Practice); 537.1 (Heat Treatment Processes); 921.3 (Mathematical Transformations)

545 (Iron & Steel); 534 (Foundry Practice); 537 (Heat Treatment); 921 (Applied Mathematics)

54 (METAL GROUPS); 53 (METALLURGICAL ENGINEERING); 92 (ENGINEERING MATHEMATICS)

24/8/3 (Item 3 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
04203042

Title: As- cast ' shape related to heat treatment distortion in circular-shaped engineering components

Publication Year: 1995

Descriptors: Casting ; Steel heat treatment; Components; Case hardening; Steel; Billets (metal bars); Steel ingots; Fourier transforms; Quenching; Metal melting

Identifiers: Circular shaped components; Gear blanks; Clutch sleeves;

Distortion assessments; Ovality

Classification Codes:

535.1.2 (Rolling Mill Practice)
534.2 (Foundry Practice); 537.1 (Heat Treatment Processes); 545.3
(Steel); 535.1 (Metal Rolling); 531.1 (Metallurgy)
534 (Foundry Practice); 537 (Heat Treatment); 545 (Iron & Steel); 535
(Rolling, Forging & Forming); 531 (Metallurgy & Metallography)
53 (METALLURGICAL ENGINEERING); 54 (METAL GROUPS)

24/8/6 (Item 6 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
02093460

Title: CAD Solid Models for New Toothed Gear Constructions.

Title: CAD-KOERPERMODELLE ERMOEGELICHEN NEUE ZAHNRADGETRIEBE-KONSTRUKTION.

Conference Title: Proceedings - CAMP '84, Computer Graphics: Applications
for Management and Productivity.

Publication Year: 1984

Descriptors: COMPUTER AIDED MANUFACTURING; METAL **FORMING** --Computer
Applications; COMPUTER GRAPHICS--Applications; MACHINERY--Gears

Classification Codes:

723 (Computer Software); 601 (Mechanical Design)
72 (COMPUTERS & DATA PROCESSING); 60 (MECHANICAL ENGINEERING)

24/8/8 (Item 8 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
01482141

**Title: LOW-FREQUENCY, HIGH-POWER LARGE-CAPACITY INDUCTION FURNACES AT THE
'FONDERIES DU POITOU' - CHATELLERAULT.**

Publication Year: 1982

Descriptors: FURNACES, MELTING--*Efficiency; **CAST** IRON--Manufacture;
ALUMINUM **CASTINGS** --Manufacture

Identifiers: INDUCTION FURNACES

Classification Codes:

532 (Metallurgical Furnaces); 534 (Foundry Practice); 545 (Iron &
Steel); 541 (Aluminum & Alloys)
53 (METALLURGICAL ENGINEERING); 54 (METAL GROUPS)

24/8/11 (Item 11 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
01196848

**Title: Optimization Methods for Components of Cast Aluminum Steering
Gear Cases .**

Title: METHODEN ZUR BAUTEILOPTIMIERUNG VON LENKGETRIEBEGEHAUSEN AUS
ALUMINIUMGUSS.

Publication Year: 1982

Descriptors: AUTOMOBILES--*Steering Systems; ALUMINUM **CASTINGS** --
Optimization

Classification Codes:

662 (Automotive Design & Manufacture); 661 (Automotive Engines &
Related Equipment); 534 (Foundry Practice); 541 (Aluminum & Alloys); 921
(Applied Mathematics)
66 (AUTOMOTIVE ENGINEERING); 53 (METALLURGICAL ENGINEERING); 54 (METAL
GROUPS); 92 (ENGINEERING MATHEMATICS)

24/8/12 (Item 12 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
01176041

Title: Original Forming and Reshaping of Gear Wheels.
Title: URFORMEN UND UMFOREMEN VON ZAHNRAEDERN.
Publication Year: 1982
Descriptors: GEARS--* Forming
Classification Codes:
604 (Metal Cutting & Machining)
60 (MECHANICAL ENGINEERING)

24/8/13 (Item 13 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
00714206

Title: Introduction of Chill Casting of Steel in the Production of Construction Machine Components.

Title: WPROWADZANIE KOKILOWEGO ODLEWANIA STALIWA W PRODUKCJI ELEMENTOW MASZYN BUDOWLANYCH.

Publication Year: 1977
Descriptors: STEEL CASTINGS ; FOUNDRY PRACTICE--Shell Process
Classification Codes:
534 (Foundry Practice); 545 (Iron & Steel)
53 (METALLURGICAL ENGINEERING); 54 (METAL GROUPS)

24/8/15 (Item 15 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
00519475

Title: STUDIES ON WEAR AND SCORING OF SPUR GEARS -- 3. IN THE CASE OF GEAR -MATERIAL COMBINATION OF BRONZE/STEEL AND CAST IRON/STEEL.

Publication Year: 1975
Descriptors: *GEARS--*Wear; STEEL HEAT TREATMENT; COMPOSITE MATERIALS
Classification Codes:
601 (Mechanical Design); 421 (Materials Properties); 537 (Heat Treatment); 545 (Iron & Steel); 415 (Metals, Wood & Other Structural Materials)
60 (MECHANICAL ENGINEERING); 42 (MATERIALS PROPERTIES & TESTING); 53 (METALLURGICAL ENGINEERING); 54 (METAL GROUPS); 41 (CONSTRUCTION MATERIALS)

24/8/16 (Item 16 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
00411785

Title: ECONOMICS OF POWDER FORGING RELATIVE TO COMPETING PROCESSES - PRESENT AND FUTURE.

Publication Year: 1973
Descriptors: POWDER METAL PRODUCTS--*Forging; METAL FORMING
Classification Codes:
535 (Rolling, Forging & Forming); 536 (Powder Metallurgy)
53 (METALLURGICAL ENGINEERING)

24/8/17 (Item 17 from file: 8)

DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
00312289

Title: GOULD HOT DENSIFIES P/M PARTS.

Publication Year: 1973
Descriptors: POWDER METALLURGY; METAL FORMING ; METALS AND ALLOYS; HEAT TREATMENT
Classification Codes:
535 (Rolling, Forging & Forming); 536 (Powder Metallurgy); 537 (Heat Treatment)
53 (METALLURGICAL ENGINEERING)

24/8/20 (Item 2 from file: 63)

DIALOG(R)File 63:(c) fmt only 2003 Dialog Corp. All rts. reserv.
00325416 DA

TITLE: BENDING MEASUREMENTS ON A GEARBOX FOR A FRONT-WHEEL DRIVE VEHICLE

PUBLICATION DATE: 19800000

DATA SOURCE: Transport and Road Research Laboratory National Swedish Road &
Traffic Research Institute

DESCRIPTORS: AUTOMATIC TRANSMISSIONS; BENDING; FRONT WHEEL DRIVE; HOUSING
; CAST IRON ; ALLOY; LIGHTWEIGHT MATERIALS; BEARING; CAR; GEAR BOX;
BENDING; MEASUREMENT; CAST IRON; ALLOY; ALUMINIUM; FRONT; WHEEL;
PROPULSION

24/8/25 (Item 1 from file: 434)

DIALOG(R)File 434:(c) 1998 Inst for Sci Info. All rts. reserv.

06538786 Genuine Article#: AKE42 Number of References: 0

Title: 16-FT DIA HUB GEAR REQUIRES INNOVATIVE CAST WELD TECHNIQUES

24/8/26 (Item 2 from file: 434)

DIALOG(R)File 434:(c) 1998 Inst for Sci Info. All rts. reserv.

01765456 Genuine Article#: EA465 Number of References: 0

**Title: PROBLEMS OF INNOVATION - CASE -STUDY - GGE 400 FORMED WHEEL GEAR
GRINDER**

24/8/27 (Item 1 from file: 144)

DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

13661238 PASCAL No.: 98-0368665

**Kriterien zur betriebsfesten Bemessung von hochbeanspruchten Gusseisen-
und Aluminiumguss-Komponenten**

**(Criteria for the fatigue design of highly stressed cast iron and cast
aluminium components)**

1998

English Descriptors: Molded piece; Cast iron; Aluminium; Fatigue strength
; Mechanical properties; Automobile industry; Commercial vehicle;
Dimensioning; Gear box; Crankcase; Review; Check; Fatigue life; Test
method

Classification Codes: 001D11C01I; 240

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24/8/28 (Item 2 from file: 144)

DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

12181009 PASCAL No.: 95-0395811

**As-cat shape related to heat treatment distortion in circular-shaped
engineering components**

1995

English Descriptors: Heat treatment; Circular shape; Metallic part; Molded
piece; Carburizing; Thermochemical treatment; Shape; Size stability;
Quench distortion; Experimental study

Classification Codes: 001D11C02E; 240

24/7/4 (Item 4 from file: 8)

DIALOG(R)File 8: Ei Compendex(R)

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02737091 E.I. Monthly No: EI8905043131

**Title: Studies on the sound and vibration of a gearbox (2nd report,
effect of casing rigidity on sound).**

Author: Igarashi, Teruo; Nishizaki, Toshiharu

Source: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v 54 n 508 Dec 1988 p 3037-3042
Publication Year: 1988
CODEN: NKCHDB ISSN: 0387-5024
Language: Japanese
Document Type: JA; (Journal Article) Treatment: T; (Theoretical)
Journal Announcement: 8905

Abstract: An investigation of sound generated from a two-step reduction gearbox was carried out in order to obtain basic information for the reduction of sound. Four test **casings** having different rigidity were prepared. The rigidity was varied by material and thickness of the **casing**. **Casing** material was **cast** iron and aluminum **cast**. Furthermore, test **gears** having an accuracy of Class JIS 1, tooth profile error, and pitch error were used. The experiments were carried out to put one of these test **gears** in the gearbox for each one. The gearbox was driven with and without load, and the sound generated was picked up by a condenser microphone. Using the signal thus obtained, sound pressure level measurement, real time frequency analysis, and sound waveform observation, etc., were carried out. From the experimental results and considerations, the fundamental characteristics of the sound of a gearbox having different **casing** rigidity were clarified, and some basic information for reduction of sound generated from gearboxes was obtained. (Author abstract) 5 Refs. In Japanese.

24/7/9 (Item 9 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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01391395 E.I. Monthly No: EI8309076171 E.I. Yearly No: EI83058343

Title: DIFFERENTIAL GEAR CASINGS FOR AUTOMOBILES BY LIQUID BULGE FORMING PROCESSES: PART 2.

Author: Ueda, Terumori

Corporate Source: Government Industrial Research Inst, Nagoya, Jpn

Source: Sheet Metal Industries v 60 n 4 Apr 1983 p 220-222, 224

Publication Year: 1983

CODEN: SHMIAR ISSN: 0037-3435

Language: ENGLISH

Journal Announcement: 8309

Abstract: The method of manufacture involves axial compression of sink-formed pipes combined with a liquid bulging operation to fill the die cavity. Practical considerations in the control of the process are detailed. 2 refs.

24/7/10 (Item 10 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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01377556 E.I. Monthly No: EI8308066059 E.I. Yearly No: EI83058342

Title: DIFFERENTIAL GEAR CASINGS FOR AUTOMOBILES BY LIQUID BULGE FORMING PROCESSES - 1.

Author: Ueda, Terumori

Corporate Source: Government Industrial Research Inst, Nagoya, Jpn

Source: Sheet Metal Industries v 60 n 3 Mar 1983 p 181-185

Publication Year: 1983

CODEN: SHMIAR ISSN: 0037-3435

Language: ENGLISH

Journal Announcement: 8308

Abstract: This study relates to manufacturing a differential **gear casing** for automobiles from a single tubular blank by the liquid bulge **forming** process with sliding-type dies and the use of a sinking process

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for **forming** the pipe ends.

24/7/14 (Item 14 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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00644285 E.I. Monthly No: EI7708054486 E.I. Yearly No: EI77006137

Title: MATERIALS TRENDS IN ENGINES AND POWER TRAINS.

Author: Fosdick, Richard J.

Source: Automotive Industries v 155 n 10 Dec 1976 p 33-40

Publication Year: 1976

CODEN: AUINAH ISSN: 0005-1527

Language: ENGLISH

Journal Announcement: 7708

Abstract: Much research is underway in the American automobile industry to reduce weight in engines, transmissions, driveshafts, and springs. Ford has been testing a graphite composite driveshaft which is 5 lb (2.27 kg) lighter than the 18 lb (8.17 kg) standard driveshaft. The test car with this shaft has traveled 15,000 mi (24,000 km) in 18 mo without problems; the same test car also has graphite-reinforced plastic leaf springs. Glass-fiber-reinforced plastics are being increasingly applied by most manufacturers, including automatic-transmission components, cover plates and fan shrouds and even radiator fans. ALuminum sheet is being investigated for deep-drawn applications. A Chrysler experimental car uses aluminum extensively in the engine and drivetrain, at a saving of 30 lb (13.61 kg). General Motors 2000THM automatic transmission (in some 1977 cars) combines the bell **housing**, **gear box case** and rear extension into one aluminum die **casting**. This eliminates separate bell **housing** and extension **housing castings**. All parts of the 200-THM drive train, except for the **gears** and shafts, are made from sheet metal stampings, welded together, or powdered metal. As a result, the rotating parts of the 200-THM, excluding torque converter, total 32 lb (14.5 kg) compared with 56 lb for GM's 400-THM transmission. Even **cast** iron engine blocks have been redesigned to save weight; Pontiac's new 301 cu in (4933 cc) V-8 powerplant is 127 lb (57.6 kg) lighter than the 350 cu in. (5737 cc) powerplant it replaces, 61 lbs (27.7 kg) being saved in the block itself. High-strength, low-alloy (HSLA) steel allows thinner-section brackets but is more susceptible to corrosion.

24/7/19 (Item 1 from file: 63)

DIALOG(R) File 63: Transport Res(TRIS)

(c) fmt only 2003 Dialog Corp. All rts. reserv.

00371130 DA

TITLE: LOST FOAM CASTING BREAKS INTO HIGH VOLUME

AUTHOR(S): McElroy, J

CORPORATE SOURCE: Chilton Company, Incorporated, One Chilton Way, Radnor, PA, 19089,

REPORT NUMBER: HS-033 905

JOURNAL: Automotive Industries Vol: 162 Issue Number: 12 Pag: pp 43-44

PUBLICATION DATE: 19821200 **PUBLICATION YEAR:** 1982

LANGUAGE: English **SUBFILE:** HSL (S 8302)

AVAILABILITY: Chilton Company, Incorporated; One Chilton Way ; Radnor; PA ; 19089

PHOTOS: 3 Phot.

DATA SOURCE: National Highway Traffic Safety Administration

ABSTRACT: Automakers are experimenting with a new **casting** process -- the lost foam **casting** process -- which could save money 10%-40% and yield higher quality parts. It is cheaper to tool and maintain, produces

greater yield and quality, and reduces finishing and trimming. For any given part, this process requires less floor space and labor content. The Central Foundry Division of General Motors and the **Casting** Division at Ford are developing the lost foam process. Automotive firms are also experimenting with it. Details of the process are briefly summarized. Ford plans to make 10,000 2:3L OHV intake manifolds a year with a pilot line to get manufacturing and field experience. To date, high production parts made by the lost foam process have been exclusively aluminum. However, Ford has made a **cast** iron planetary **gear case** for the Escort ATX that looks promising and could prove to be an important development.

24/7/21 (Item 1 from file: 94)

DIALOG(R) File 94:JICST-EPlus

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04492550 JICST ACCESSION NUMBER: 00A0109665 FILE SEGMENT: JICST-E

Influence of Sectional Shape of Molds for Continuous Casting on Distortion during Case Hardening.

KIMURA TOSHIMITSU (1); NAKAMURA SADAYUKI (1)

(1) Daido Steel Co., Ltd.

Denki Seiko(Electric Furnace Steel), 2000, VOL.71,NO.1, PAGE.13-18, FIG.14, TBL.2, REF.14

JOURNAL NUMBER: F0098AAK ISSN NO: 0011-8389 CODEN: DESEA

UNIVERSAL DECIMAL CLASSIFICATION: 669.017:620.181

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: Distortion in **case** hardened JIS-SCM420 specimens was investigated with relation to the shape of continuous **casting** molds. Hot rolled bars made from two **cast** blocks, where one of the blocks has round section(Steel A) and the other has rectangular section(Steel B), were prepared. Macro-etched pattern in a cross section of the bars has round shape for Steel A and rectangular shape for Steel B, respectively. After carburized, ring specimens produced from Steel B were distorted to an oval shape, whose line on upside was correspondent to the longitudinal direction of the rectangular macro-etched pattern. On the other hand, the ring specimens of Steel A did not show conspicuous change in shape. It was also confirmed that the shape change in **gears** of Steel A was smaller than that of Steel B. Furthermore, it was found that the specimens cut from the inner part of the macro-etched pattern expanded less than ones cut from the outer. And a FEM analysis was carried out to check the distortion in mesh models that consisted of a round or rectangular area surrounded by an area with higher expansion coefficient. The calculated shape changes were consistent with the shape change observed in ring specimens and **gears** . (author abst.)

24/7/29 (Item 3 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

07786472 PASCAL No.: 87-0266131

Verkettete Fertigungseinrichtung fuer das automatische Druckgiessen von Automatikgetriebegehäusen

(Interlinked production equipment for automated pressure die casting of automatic gear cases)

HARTIG W

February 28, 2003

Serial 09/864064

Reis G.m.b.H. & Co. Maschinenfabrik, Obernburg, Federal Republic of Germany

Journal: Giesserei, 1986-10-13, 73 (21) 610-612

ISSN: 0016-9765

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Federal Republic of Germany

Language: German

Automatisches Druckgiessen des Gehaeuses fuer Pkw-Automatikgetriebe, Giessgewicht 18 kg Aluminiumlegierung, mit Einbezug des Entgratens im automatischen Ablauf. Aufbau der Fertigungszelle aus Druckgiessmaschine, Giessofen, Radialentnahmegeeraet, Tauchkuehlbecken, Entgratpresse mit Schnittwerkzeug. Anordnung der Anlageteile und Arbeitsablauf. Aufbau der Entgratanlage.

24/7/30 (Item 4 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

05182887 PASCAL No.: 83-0448825

Differential gear casings for automobiles by liquid bulge forming processes. Pt. 1

(Fabrication de carters de boites de vitesses pour automobiles par formage par expansion avec des agents fluides. Partie 1)

UEDA T

Government Industrial Research Inst., Nagoya, Japan

Journal: Sheet met. ind., 1983-03, 60 (3) 181-185

ISSN: 0037-3435

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United Kingdom

Language: English

Principe du procede hydraulique de formage par expansion et des outils necessaires. Conception des carters de boites de vitesses, et indications relatives aux dimensions, aux caracteristiques mecaniques et a la composition chimique des tubes d'origine en acier au carbone, utilises pour la fabrication. Execution du controle qualite des tubes. Deroulement du procede au cours de la fabrication des boites de vitesses par formage par retreint en trois etapes et par expansion en deux etapes. Determination des forces necessaires pour le procede de retreint et conception des outils pour retreindre les deux extremités du tube

Prinzip des hydraulischen Ausbauchverfahrens und der dafuer erforderlichen Werkzeuge. Gestaltung der Differentialgetriebegehaeuse sowie Angabe der Abmessungen, mechanischen Eigenschaften und chemischen Zusammensetzung der fuer die Herstellung verwendeten Ausgangsrohre aus Kohlenstoffstaehlen. Durchfuehrung der Qualitaetspruefung der Rohre. Verfahrensablauf bei der Getriebegehaeuseherstellung durch dreimaliges Einziehen und zweimaliges Ausbauchen. Ermittlung der erforderlichen Kraefte fuer die Einziehverfahren und Gestaltung der Werkzeuge zum Einziehen der beiden Rohrenden.

24/7/31 (Item 5 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

05070417 PASCAL No.: 83-0329530

Methoden zur Bauteiloptimierung von Lenkgetriebegehaeusen aus Aluminiumguss

(Methods to optimize structural parts of steering gear cases of cast aluminium)

FIRCH F; NAUNDORF H; ZIESE J

Bayerische Motorenwerke A.G. -BMW-, Muenchen, Federal Republic of Germany

Searcher: Jeanne Horrigan

12

February 28, 2003

Serial 09/864064

Deutscher Giessereitag 1981 (Duesseldorf (DE)) 19810625 - 19810626

Journal: Giesserei, 1982-07-19, 69 (15) 421-424

ISSN: 0016-9765

No. of Refs.: 7 ref.

Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)

Country of Publication: Federal Republic of Germany

Language: German

24/7/32 (Item 1 from file: 96)

DIALOG(R)File 96:FLUIDEX

(c) 2003 Elsevier Science Ltd. All rts. reserv.

00206214 FLUIDEX NO: 0214183 SUBFILE: FP

Cast casing components.

AUTHOR(S): Werning H.

Ind. Anz., vol.109, no.95, Nov. 11, 1987, p.26-27., 1987

DOCUMENT AVAILABLE: YES

ISSN: 0019-9036

RECORD TYPE: ABSTRACT

LANGUAGES: German

Various examples of **casings** for different types of **gears** and mechanisms made of **cast** iron materials are described and illustrated. They include the **casing** for a piston valve regulator, the **casing** for a hydraulic motor, axle mechanisms for underground railways, a giant chuck, and the **casing** for a rotary piston pump.

27/6/3 (Item 1 from file: 553)
03314701 H.W. WILSON RECORD NUMBER: BWBA96064701 (USE FORMAT 7 FOR FULLTEXT)
MINEExpo International '96.
AUGMENTED TITLE: preview; cover story
July '96
WORD COUNT: 21636

27/6/4 (Item 2 from file: 553)
03068479 H.W. WILSON RECORD NUMBER: BWBA95068479 (USE FORMAT 7 FOR FULLTEXT)
American Axle.
AUGMENTED TITLE: R. E. Dauch takes old operations to new heights
Aug. '95
WORD COUNT: 994

27/7/1 (Item 1 from file: 6)
DIALOG(R) File 8: Ei Compendex(R)
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
00197774 E.I. Monthly No: EI72X000057
Title: Modern heat treating practices. Cadillac automates carburizing of gears and pinions.
Author: ANON
Source: Meta Progr v 100 n 1 July 1971 p 68-9
Publication Year: 1971
Language: ENGLISH
Journal Announcement: 72X0
Abstract: Differential ring gears and pinions made of SAE 4626 are carburized at 1650 F in a six- zone continuous furnace. Because atmospheres are individually controlled in each zone, case depths and dimensions stay within close tolerance consistently.

29/6,K/1 (Item 1 from file: 8)
DIALOG(R) File 8: (c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.
01162351
Title: AUSTEMPERED BAINITIC CAST IRONS.
Publication Year: 1982
...Abstract: by excellent wear resistance so these irons have been adopted by some manufacturers for automotive ring gears and pinions, replacing forged, case-hardened steel. This important development suggests that not only SG iron but also perhaps the...
Descriptors: CAST IRON...

29/6,K/3 (Item 1 from file: 96)
DIALOG(R) File 96: (c) 2003 Elsevier Science Ltd. All rts. reserv.
00142878 FLUIDEX NO: 0149587 SUBFILE: T
Application of induction hardening ductile cast iron gears.
JSAE Rev., no.13, Mar. 1984, p.84-90., 1984
There have been increasing numbers of cases where steel components have been replaced by ductile cast iron components in automobiles. To further...
...to increase the strength and wear resistance of ductile cast iron. From this viewpoint planetary ring gears were employed for automatic transmissions and induction hardening was applied to ductile cast iron.
This...

February 28, 2003

Serial 09/864064

File 95:TEME-Technology & Management 1989-2003/Feb W2

File 9:Business & Industry(R) Jul/1994-2003/Feb 26

File 15:ABI/Inform(R) 1971-2003/Feb 27

File 20:Dialog Global Reporter 1997-2003/Feb 27

File 481:DELPHEs Eur Bus 95-2003/Feb W4

File 608:KR/T Bus.News. 1992-2003/Feb 27

File 624:McGraw-Hill Publications 1985-2003/Feb 26

File 635:Business Dateline(R) 1985-2003/Feb 27

File 636:Gale Group Newsletter DB(TM) 1987-2003/Feb 26

File 553:Wilson Bus. Abs. FullText 1982-2003/Jan

File 98:General Sci Abs/Full-Text 1984-2003/Jan

Set	Items	Description
S1	454538	CAST OR CASTS OR CASTING? ?
S2	3587633	FORM OR FORMS OR FORMED OR FORMING
S3	4450344	HOUSING? ? OR HUB OR HUBS OR CASING? ? OR CASE OR CASES
S4	240084	GEAR OR GEARS
S5	281	RING() GEAR? ? OR RING() SHAPE? ?() GEAR? ?
S6	111945	DIFFERENTIAL
S7	2180756	SINGLE OR UNITARY OR INTEGRAL
S8	6	S6() S3(S) S5
S9	3	S1:S2 AND S8
S10	3	RD (unique items)
S11	104	S1:S2(5N) S3(5N) S4
S12	286332	S1:S2/TI, DE
S13	30	S11 AND S12
S14	30	RD (unique items)
S15	30	S14 NOT S10
S16	4	S15/2003 OR S15/2002
S17	26	S15 NOT S16
S18	3	S11(S) S7
S19	3	S18 NOT S13

17/8/1 (Item 1 from file: 95)

DIALOG(R) File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.

01666880 20020807139

Austempered ductile iron castings for chassis applications

(Bainitisches Gusseisen mit Kugelgraphit fuer ein Bauteil des Fahrwerkes)

2000

DESCRIPTORS: GROUND GEAR ; BAINITIC CASTIRON; DUCTILE CAST IRON; CASE

STUDIES; MATERIALS SELECTION; MATERIALS REPLACEMENT; WROUGHT STEEL

IDENTIFIERS: HECKAUFHAENGUNG; Fahrzeugfahrwerk; Gusseisen (ADI); Fallstudie

17/8/2 (Item 2 from file: 95)

DIALOG(R) File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.

01666874 20020807145

High integrity structural aluminum casting process selection

(Verfahrensoptimierung fuer die Herstellung dreier komplexer

Aluminiumgussstuecke)

2000

DESCRIPTORS: ALUMINIUM CAST ALLOYS; PROCESS SELECTION; COMPARISON OF

METHODS; CASE STUDIES; VEHICLE COMPONENTS; GEAR SHAFT; YIELD LIMIT;

PULL STRENGTH; ELONGATION; THYXOCASTING; PRESSURE DIE CASTING ; HEAT

TREATING; ALSIMG ALLOYS

IDENTIFIERS: LACKIERPISTOLE; Aluminiumgussstueck; Verfahrensoptimierung;

Verfahrenswahl

17/8/4 (Item 4 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
01481231 20010200851

Titel russisch

(Gussteile aus hochfestem Gusseisen)

2000

DESCRIPTORS: **CASTING** --WORKPIECES; HIGH STRENGTH MATERIALS; DUCTILE **CAST** IRON; GRAY-- **CAST** --IRON; MALLEABLE **CAST** IRON; HEAT TREATMENT--MATERIALS; **HUBS** ; LADLE TREATMENT; **GEAR** BOXES; FERROSILICON; **CASTING** LADLES; MODIFICATION; MICROSTRUCTURE; EUTECTOID TRANSFORMATION
IDENTIFIERS: PFANNENMODIFIZIERUNG; INNENFORMMODIFIZIERUNG; hochfestes Gusseisen; Getriebegehaeuse; Waermebehandeln

17/8/6 (Item 6 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
01306837 W99056657401

Pressure die casting current trends and future applications

(Gegenwaertige Stand, Entwicklungsrichtungen und zukuenftige Entwicklungen des Druckgiessens)

1997

DESCRIPTORS: MAGNESIUM ALLOYS; AL ALLOYS; LIGHT METAL **CAST** ALLOYS; MATERIALS REPLACEMENT; VEHICLE COMPONENTS; REVIEW; **GEAR** BOXES; **CASINGS** ; ENGINES; STRUCTURAL MATERIALS; PRESSURE DIE **CASTINGS** ; PRESSURE DIE **CASTING** ; VACUUM **CASTING** ; PROCESS VARIANT; SIMULTANEOUS ENGINEERING; ALSIMG ALLOYS; ALSICU ALLOYS
IDENTIFIERS: Fahrzeugbauteil; Druckgiessen; Aluminiumguss; Magnesiumguss

17/8/7 (Item 7 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
01074110 W97027002401

Die cast process and tooling improvement

(Das Druckgiessen mit instandgesetzten Druckgiessformen)

1995

DESCRIPTORS: COLD CHAMBER DIE **CASTING** MACHINES; PRESSURE **CASTING** DIE; DURATION OF LIFE; AVAILABILITY FACTOR; MAINTENANCE; COST REDUCTION; REPROCESSING; LIGHT METAL **CAST** ALLOYS; TOOL MANAGEMENT
IDENTIFIERS: instandgesetzte Druckgiessform; Kostensenkung

17/8/8 (Item 8 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
00962812 W96026705401

CAD-unterstuetzte Ableitung von Rohgussteil und Giessereimodell fuer ein Getriebegehaeuse-Unterteil

(CAD-supported design of raw **casting** and pattern equipment for the lower part of a **gear case**)1995

DESCRIPTORS: METALLIC PART; **CASTING** --WORKPIECES; GEAR BOXES; FOUNDRY PATTERN; COMPUTER AIDED DESIGN; DESIGN; CONSTRUCTING; GRAY-- **CAST** --IRON; COMPONENTS--STRUCTURAL ELEMENTS; COST REDUCTION
IDENTIFIERS: GIESSGERECHTES KONSTRUIEREN; ENTWICKLUNG; Gussteilgestaltung; Fertigteil; Modellgestaltung; CAD-System

17/8/9 (Item 9 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
00944257 W95112092401

MAGMASOFT - the MAGMA system of mold filling and solidification modelling
(MAGMASOFT - das MAGMA-System fuer die Simulation von Formfuellung und Erstarrung)

1991

DESCRIPTORS: COMPUTERIZED SIMULATION; **CASTING** --WORKPIECES; SOLIDIFICATION
; MOULD FILLING-- **CASTING** ; COMPUTER SOFTWARE; VEHICLE COMPONENTS; **CASINGS**
; **GEAR BOXES** ; CYLINDER BLOCKS
IDENTIFIERS: Erstarrungssimulation; Formfuellung

17/8/11 (Item 11 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
00918087 W95082100401

Gusseisen mit Vermiculargraphit fuer Abgaskruemmer und Getriebegehaeuse
(Vermicular **cast** iron for exhaust manifolds and **gear cases**)1995

DESCRIPTORS: COMPACTED GRAPHITE **CAST** IRON; MASTER ALLOYS; MOLTEN METAL
TREATMENT; COEFFICIENT OF THERMAL EXPANSION; HEAT CONDUCTIVITY; GEAR BOXES;
RESISTANCE TO THERMAL SHOCK; CONTINUOUS SERIES TYPE PRODUCTION; INOCULATION
IDENTIFIERS: ABGASKRUEMMER; Abgaskruemmer; Getriebegehaeuse; Gusseisen(GGV)

17/8/13 (Item 13 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
00794926 M94068065679

Zahnradpumpe

(Gear pump)1994

DESCRIPTORS: PUMPS; POSITIVE ROTARY PUMPS; **GEAR** PUMPS; **CASINGS** ; TOOTHED
WHEELS; CONSTRUCTIONAL **FORM**
IDENTIFIERS: Zahnradpumpe; Bauweise

17/8/15 (Item 15 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
00746325 M94026463560

Zur Gestaltung geschweisster, einatzgehaerteter Grosszahnraeder
1992

DESCRIPTORS: WELDED JOINT; **CASE** HARDENING; CONSTRUCTIONAL **FORM** ;
DIMENSIONING; MECHANICAL STRENGTH; **GEAR** CROWN; **HUBS** ; LOAD--FORCES;
INTERNAL STRESS; WELDING SEAMS; ENDURANCE STRENGTH; STRESS ANALYSIS;
STIFFENING; APPROXIMATION METHOD; FEA--FINITE ELEMENT ANALYSIS; MODEL TEST
IDENTIFIERS: GROSSSTIRNRAD; BAUTEILDIMENSIONIERUNG; FESTIGKEITSNACHWEIS;
MODELLRAD; Grosszahnrad; Einsatzhaerten; Schweissen; Festigkeit

17/8/16 (Item 16 from file: 95)

DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.
00687703 M93038331679

Method of protecting casing during high pressure well stimulation

(Verfahren zum Schutz des Gehaeuses im Bohrloch waehrend einer
Hochdruckanwendung)

1992

DESCRIPTORS: PROTECTIVE **GEAR** ; **CASINGS** ; HIGH PRESSURE; CONSTRUCTIONAL
FORM ; GASKETS--SEALS
IDENTIFIERS: Hochdruckbohren; Gehaeuseschutz

17/8/25 (Item 1 from file: 635)

DIALOG(R)File 635:(c) 2003 ProQuest Info&Learning. All rts. reserv.
0989799 99-52640

Firm's computers refine old art of iron casting

PUBL DATE: 980928

WORD COUNT: 1,145

DATELINE: Athens, NY, US, Middle Atlantic

COMPANY NAMES: Wormuth Brothers Foundry Inc, Athens, NY, US, SIC:3322,

CLASSIFICATION CODES: 8660 (Metalworking industry); 5240 (Software &

systems)
DESCRIPTORS: Metalworking industry; Foundries; CAM
SPECIAL FEATURE: Photo

17/3,AB,K/5 (Item 5 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management
(c) 2003 FIZ TECHNIK. All rts. reserv.
01367728 W99126788401

Aluminum A357 alloy - foundry metallurgy for an aircraft gear housing
(Herstellung eines Flugzeug-Getriebegehäuses aus Aluminiumgusslegierung A357)

Gallo, R
Ohio Aluminum Industries, USA
Molten Aluminium Processing. 5th International AFS Conference. Orlando, USA, 8.-10.11.1998
Document type: Conference paper Language: English
Record type: Abstract

ABSTRACT:

This paper discusses a real life experience in the casting development program as well as the metallurgical aspects involved in producing an A357-T71 aluminum aircraft **casting quality gear housing**. Premium quality A357 aluminum alloy **castings** are utilized in aircraft applications such as the **gear housings** used in the main engine fuel control pumps. The final mechanical properties of these castings are determined by factors such as casting process, casting internal integrity, and thermal treatment. Since these factors depend on several interrelated process variables, it is imperative to minimize process variables by identifying and controlling key metallurgical characteristics during the **casting** process. While the origin of the **gear housing** design was not important to the foundry, it had to be considered in the establishment of the manufacturing process. From both design and metallurgical considerations, the dry sand process was chosen as the manufacturing process; Once the manufacturing process was conceived, the next step was to develop the **casting** process. The approach to develop and engineer the **gear housing casting** process was through continuous interactions of three interrelated disciplines: gating design, melt treatment technology, and foundry manufacturing controls. The gating design evolved from an expensive and time consuming trial and error process to achieve metallurgical and mechanical casting integrity. As the gating evolution progressed, a correlation of mechanical properties with molten metal processing parameters was conducted until the gear housing met customer's requirements. To assure metallurgical quality and mechanical property reliability foundry process controls were established to reduce process variation in the areas of metal composition, especially the hydrogen content, molten metal quality, floor practices and heat treatment. The main purpose of this article is to present metallurgical aspects in molten metal processing and mechanical properties of the A357-T71 alloy rather than the engineering aspects of the casting and gating designs.

DESCRIPTORS: AEROPLANES; AERONAUTIC INDUSTRY; LIGHT METAL **CAST ALLOYS**; AL ALLOYS; DEGASIFICATION; PULL STRENGTH; BREAKING ELONGATION; YIELD LIMIT; REPEATABILITY; HYDROGEN; IMPURITY EFFECT; SAND **CASTINGS**; DRY SAND MOLDING; INGATE; DESIGN; HEAT TREATING; MOLTEN METAL TREATMENT; CHEMICAL COMPOSITION; MICROSTRUCTURE; QUALITY INSPECTION

17/3,AB,K/10 (Item 10 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management
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February 28, 2003

Serial 09/864064

00918096 W95082091401

Effiziente Gestaltung von gegossenen Getriebegehäusen auf der Basis technologieorientierter CAD-Funktionselemente

(Efficient shaping of cast gear cases on the base of technology orientated CAD function elements)

Haasis, S; Mischkolin, F; Zuefle, J

FH f. Technik, Esslingen, D

Konstruieren und Giessen, v19, n4, pp21-31, 1994

Document type: journal article Language: German

Record type: Abstract

ISSN: 0341-6615

ABSTRACT:

An Hand des vorliegenden Beispiels (gegossenes Getriebegehäuse) wird gezeigt, wie der Konstrukteur bei sämtlichen Routinearbeiten vom CAD-System unterstützt wird und die bauteilbeschreibenden Daten in nachgeschaltete Abwicklungsprozesse (Kalkulation, Arbeitsplanung und NC-Programmierung) einbezogen werden. Es wird ein wissensbasiertes Konstruktionsverbundsystem vorgestellt, dem die Methode der featurebasierten Modellierung zugrunde liegt. Hierbei ist es möglich bereits im Produktentstehungsprozess den einzelnen Features neben der geometrischen Beschreibung auch Informationen über Funktion bzw. Teilfunktion sowie Technologie zuzuordnen.

DESCRIPTORS: COMPUTER AIDED DESIGN; GEAR BOXES; **CASTING** --

17/3,AB,K/12 (Item 12 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management

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00908338 W95072142401

Titel russisch

(Herstellung von Lenkgehäusen nach dem Kokillengießverfahren)

(**Casting** of steering gear case in metal moulds)

Bastrakov, VK; Nikulin, LV; Majorov, JM; Petrov, VG; Ovcinnikova, LV

Litejnoe Proizvodstvo, v2267, n1, pp20-21, 1995

Document type: journal article Language: Russian

Record type: Abstract

ISSN: 0024-449X

ABSTRACT:

Untersuchungen zur Herstellung von Lenkgehäusen für Kraftfahrzeuge aus Aluminiumsekundaerlegierungen (kupferhaltigen Al-Si-Legierungen mit Anteilen an Magnesium, Mangan, Nickel und Zink) nach dem Kokillengießverfahren, speziell für das Lenkgehäuse für den PKW Moskvic IZh 2125 aus der Aluminiumsekundaerlegierung AK9M2N. Angaben zu den mechanischen Eigenschaften (Zugfestigkeit, Bruchdehnung) in Abhängigkeit vom Eisengehalt dieser Legierung (0,6 bis 1,6 %). Empfohlen wird, dass der Eisengehalt bei maximal 1,2 % liegt und die Schmelze der Sekundaerlegierung nicht länger als 2,5 h im Ofen gehalten wird. Es dürfen auch nur maximal 50 % des Kreislaufmaterials wieder eingesetzt werden. Angaben zur linearen und Volumenschwindung der Aluminiumsekundaerlegierung AK9M2N.

DESCRIPTORS: CHILL CASTINGS ; AL ALLOYS; CHEMICAL COMPOSITION; MECHANICAL PROPERTIES; PROCESS CONDITION; VEHICLE COMPONENTS; CASINGS; IRON ADDITION; COMPOSITION EFFECT...

17/3,AB,K/14 (Item 14 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management

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00768577 M94038017679

Kraftfahrzeuggetriebe

February 28, 2003

Serial 09/864064

(Motor vehicle gear)

Shirley, RE; Hueckler, V; Eckhardt, U

Deere & Co., Moline, USA

1993

Document type: European patent application Language: German

Record type: Abstract

ABSTRACT:

Getriebe fuer Kraftfahrzeuge, insbesondere fuer landwirtschaftliche oder Nutzfahrzeuge, das mehrere Getriebeeinheiten enthaelt, die wahlweise modular zusammensetzbar sind, dadurch gekennzeichnet, - dass das Getriebe wenigstens zwei Getriebeeinheiten umfasst, deren Getriebegehaeuse jeweils im wesentlichen hutfoermig ausgebildet sind und auf einer Gehaueseseite einen Bodenflansch (20, 26, 30, 42) und auf der hierzu gegenueberliegenden Seite eine Gehaueseoeffnung enthalten, welche durch den Bodenflansch (26, 30, 40) eines benachbarten Getriebegehaeuses nach aussen verschliessbar ist, - dass jeder der beiden Getriebeeinheiten wenigstens eine Getriebewelle (S1, S2, S3, S4, S5, S6, S7, S8, S9) zugeordnet ist, die einenends in dem Bodenflansch (20, 26, 30, 42) des zugehoerigen Getriebegehaeuses gelagert ist und sich anderenends frei in die Gehaueseoeffnung des Getriebegehaeuses erstreckt, derart, - dass das Getriebegehaeuse mit der zugehoerigen Getriebewelle (S1, S2, S3, S4, S5, S6, S7, S8, S9) sowie gegebenenfalls mit weiteren Komponenten eine fuer sich vormontierbare Getriebeeinheit bildet, und - dass sich das frei in die Gehaueseoeffnung des Getriebegehaeuses erstreckende Ende der Getriebewelle (S1, S2, S3, S4, S5, S6, S7, S8, S9) am Bodenflansch (26, 30, 40) oder einer geeigneten Aufnahme (29, 36) einer benachbarten Getriebeeinheit abstuetzt. (Ohne Gewaehr hinsichtlich Schutzzumfang und Anwendung.)

...DESCRIPTORS: SET OF GEAR WHEELS; VEHICLE GEARS; AGRICULTURAL MACHINERIES ; COMMERCIAL VEHICLES; GEAR TECHNIQUE; GEAR SHAFT; CASINGS ; GEAR BOXES ; CONSTRUCTIONAL FORM

17/3,AB,K/17 (Item 17 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management

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00686578 M93048443679

Hydrostatic transaxle

(Hydrostatisches Getriebe, kombiniert mit Achsausgleichsgetriebe)

Kaler, RLvon; Havens, DI; Weirich, MP

Tecumseh Products Co., Tecumseh, USA

1993

Document type: European patent application Language: English

Record type: Abstract

ABSTRACT:

A hydrostatic transmission (21) comprising: a housing including a first part (64) and a second part (22) fastened to said first part; input drive means (58, 60) for transmitting rotational energy to said transmission (21); a conduit (72) disposed within said housing; a pump (24) in said housing driven by said input drive means (58, 60), said pump (24) radially disposed on said conduit (72) and in fluid communication therewith, said pump (24) including a plurality of pump pistons (134) rotatably disposed radially outwardly of said conduit (72); said pump (24) including a track ring (132) radially outwardly disposed of said pump pistons (134), said pump track ring (132) guiding said pistons and being eccentrically pivotable about said conduit; a motor (26) in said housing radially disposed on said conduit (72) and in fluid communication therewith, said motor (26) including a plurality of motor pistons (116) rotatably disposed radially outwardly of said conduit; characterized by a motor track ring

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(114) radially outwardly disposed of said motor pistons (116) and guiding said piston, said motor track ring (114) being clampingly held between said housing parts (64, 22) to retain said motor track ring (114) fixed relative to said conduit (72); and output drive means (30) connected to said motor (26) for outputting rotational energy therefrom. (No obligations as to scope of patent protection and application.)

...DESCRIPTORS: SET OF GEAR WHEELS; DIFFERENTIAL GEARS ; FORCE TRANSFER; CONSTRUCTIONAL FORM ; HYDROSTATIC TRANSMISSIONS; CASINGS ; GEAR BOXES

17/3,AB,K/18 (Item 18 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management

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00627010 M92098336679

Getriebegehäuse aus Gussmetall

(Cast metal transmission housing)

Springer, K

Deere and Co., Moline, USA

1992

Document type: European patent application Language: German

Record type: Abstract

ABSTRACT:

Getriebegehäuse (10) aus Gussmetall, insbesondere fuer ein Fahrzeugdifferentialgetriebe, dessen Bodenbereich wenigstens teilweise als Oelsumpf (30) ausgebildet ist und ueber wenigstens einen in die Gehäusewandung (12) eingegossenen Oelkanal (14) mit wenigstens einer Oelpumpe (28) in Verbindung steht, wobei der Oelkanal (14) sich zwischen einer im Bereich des Oelsumpfes (30) muendenden Ansaugstelle (18) und einer äusseren Austrittsoeffnung (24), die mit der Ansaugoeffnung (26) der Oelpumpe (28) verbunden ist, erstreckt und wobei in die Ansaugstelle (18) ein stirnseitig offenes Ende eines Oelfilters, das eine im wesentlichen zylindrische Filterfläeche aufweist, muendet. (Ohne Gewähr hinsichtlich Schutzzumfang und Anwendung.)

...DESCRIPTORS: SET OF GEAR WHEELS; CASINGS ; CAST METALS ; VEHICLE GEARS ; LUBRICATION; DIFFERENTIAL GEARS ; CONSTRUCTIONAL FORM

17/3,AB,K/20 (Item 20 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management

(c) 2003 FIZ TECHNIK. All rts. reserv.

00607601 M92090314632

Universell einsetzbare Getriebe mit Monoblock-Gehäuse

(Universal application of gears with monoblock housings)

Torelli, C

Rossi Motoriduttori, Modena, I

Antriebstechnik, v31, n8, pp50,53-54,56, 1992

Document type: journal article Language: German

Record type: Abstract

ISSN: 0722-8546

ABSTRACT:

Thema dieses Beitrages ist der universelle Einsatz von Getrieben mit Monoblockgehäusen, d.h. ungeteilten Gehäuseloeken, in denen sich alle Getriebeteile befinden. Derartige Getriebe sind in den letzten Jahren zunehmend auf dem Markt durchgesetzt worden. In diesem Beitrag wird eingegangen auf konstruktive Merkmale dieser universellen Gehäuse, Konstruktionsspielraum durch Universalanwendung, Zwischengroessen, Innovationen am Gehäuse, Zuverlässigkeit und Wirtschaftlichkeit in einem erweiterten Rahmen. Insbesondere eingegangen wird auf das Konzept der Getriebereihe G 92 von ROSSI MOTORIDUTTORI.

February 28, 2003

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...DESCRIPTORS: SET OF **GEAR** WHEELS; **GEAR** MANUFACTURE; **CASINGS** ;
CONSTRUCTIONAL **FORM** ; SERIES; TOOTHED WHEELS; MACHINE SHAFTS; RELIABILITY;
STANDARDISATION; EFFICIENCY...

17/3,AB,K/24 (Item 1 from file: 15)

DIALOG(R)File 15:ABI/Inform(R)

(c) 2003 ProQuest Info&Learning. All rts. reserv.

0206228 53965047

Assembly by die casting

Muir, Mike

Appliance Manufacturer v48n5 PP: 42-44 May 2000 ISSN: 0003-679X

JRNL CODE: APL

WORD COUNT: 903

ABSTRACT: Assembly by die casting, also known as injected metal assembly, is used as the jointed medium to assemble multiple small components up to 6 in. in diameter, and as the production method to form additional components directly on the assembly. The main reasons for selecting the method are: accuracy, strength, quality control and economy.

...TEXT: must be made and then joined. Typical features that can be added during the die- **casting** process include **hubs** , **gears** , keys, ratchets, cams, levers, external threads, sleeves, and pinions...

17/3,AB,K/26 (Item 1 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)

(c) 2003 The Gale Group. All rts. reserv.

04942248 Supplier Number: 72299880

IMA system joins large assemblies during casting .

Advanced Materials & Processes, v159, n3, p16

March, 2001

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Academic

Word Count: 290

... s just a matter of volume."

Typical features that can be added during the die **casting** process include **hubs** , **gears** , keys, ratchets, cams, levers, external threads, sleeves and pinions. It is suitable for joining a...

19/6/1 (Item 1 from file: 15)

01046702 96-96095

USE FORMAT 9 FOR FULL TEXT

Zinc the choice

Jun 1995 LENGTH: 2 Pages

WORD COUNT: 545

19/6/3 (Item 2 from file: 20)

03969816 (USE FORMAT 7 OR 9 FOR FULLTEXT)

Foundrymen Meet in Taipei

January 08, 1999

WORD COUNT: 931

February 28, 2003

Serial 09/864064

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200314

File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)

File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	264338	CAST OR CASTS OR CASTING? ?
S2	5509812	FORM OR FORMS OR FORMED OR FORMING
S3	1709319	HOUSING? ? OR HUB OR HUBS OR CASING? ? OR CASE OR CASES
S4	286365	GEAR OR GEARS
S5	7705	RING()GEAR? ? OR RING()SHAPE? ?()GEAR? ?
S6	169385	DIFFERENTIAL
S7	720969	SINGLE OR UNITARY OR INTEGRAL
S8	4561	IC=F16H-057/02
S9	205	IC=B21K-003/00
S10	108	S1:S2 AND S6(2W)S3 AND S5
S11	1	S10 AND S8 AND S9
S12	14	S10 AND S8:S9
S13	13	S12 NOT S11
S14	13659	S1:S2(S)S3(S)S4
S15	1	S8 AND S9
S16	555	S14 AND S8:S9
S17	596	S14(S)S7
S18	27	S16 AND S17
S19	27	S17 AND S8:S9
S20	26	S19 NOT S12

13/26, TI/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

014992326

WPI Acc No: 2003-052841/200305

Final reduction gear of vehicle, has lubricating-oil guide path formed between hob parts for bolt passing through, and introduces lubricating oil accompanying rotation of ring gear

13/26, TI/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

010503726

WPI Acc No: 1996-000677/199601

Vehicle axle differential with loaded differential bearing - consists of differential housing supported within outer case on two bearings one containing load element

13/26, TI/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

009942349

WPI Acc No: 1994-210062/199426

System for automatically assembling differential gearbox - has shaft feeder to automatically introduce a pair of pinion gears between side gears within the gear box casing and bring them into matching engagement

13/26, TI/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007338978

February 28, 2003

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WPI Acc No: 1987-335984/198748

**Automatic motor vehicle transmission - has gear change unit in housing
and differential housing with partition between them**

13/26, TI/6 (Item 1 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

07427137

FINAL REDUCTION GEAR OF VEHICLE

13/26, TI/7 (Item 2 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

07312683

BREATHING STRUCTURE OF DIFFERENTIAL GEAR DEVICE

13/26, TI/8 (Item 3 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

07238688

**METHOD OF MEASURING DIMENSION OF DIFFERENTIAL CASE ASSEMBLY FOR
SELECTING SHIM, AND DIMENSION-MEASURING APPARATUS USING THE METHOD FOR
SELECTING SHIM**

13/26, TI/9 (Item 4 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

06919418

DIFFERENTIAL DEVICE OF AUTOMOBILE

13/26, TI/11 (Item 6 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

05189650

DIFFERENTIAL GEAR

13/26, TI/12 (Item 7 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

05098597

**LUBRICATION STRUCTURE OF FINAL REDUCTION GEAR DIFFERENTIAL GEAR FOR
AUTOMOBILE**

13/26, TI/13 (Item 8 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

03937654

BREATHING DEVICE FOR DIFFERENTIAL CARRIER

13/7/2 (Item 2 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

011095779 **Image available**

WPI Acc No: 1997-073704/199707

**Differential for transmission of vehicle drive shaft - has ring gear
made of steel-base metal cast into non-ferrous metal differential**

case and made into one piece
Patent Assignee: YANAGAWA SEIKI CO LTD (YANA-N)
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No Kind Date Applicat No Kind Date Week
JP 8320059 A 19961203 JP 95126652 A 19950525 199707 B
Priority Applications (No Type Date): JP 95126652 A 19950525
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
JP 8320059 A 13 F16H-057/02
Abstract (Basic): JP 8320059 A

The differential (24) transmits the engine drive force via a **ring gear** (26) coming from the output shaft (20) of a transmission (2) into a wheel drive shaft (8) via differential gears (7) housed in a **differential case** (25) which rotates together with the **ring gear**. The **ring gear** is made of steel-base metal and is **cast** into the non-ferrous metal **differential case** and made into one piece.

ADVANTAGE - A lightweight and stable-performance differential available using the simplified production process.

Dwg.4/16

Derwent Class: P53; Q64
International Patent Class (Main): **F16H-057/02**
International Patent Class (Additional): B22D-019/00; F16H-048/08

13/7/10 (Item 5 from file: 347) *This is a duplicate*
DIALOG(R) File 347:JAPIO
(c) 2003 JPO & JAPIO. All rts. reserv.
05364559 **Image available**
DIFFERENTIAL, MANUFACTURE OF IT AND CORE TO BE USED IN MANUFACTURE
PUB. NO.: 08-320059 [JP 8320059 A]
PUBLISHED: December 03, 1996 (19961203)
INVENTOR(s): ASHIKAWA NOBORU
SUZUKI MASAKI
NAKANO MITSU HARU
HARANO EISHIN
APPLICANT(s): YANAGAWA SEIKI KK [366590] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-126652 [JP 95126652]
FILED: May 25, 1995 (19950525)

ABSTRACT

PURPOSE: To hold a lightweight and stable function over a long period as well as to improve productive efficiency by **casting a ring gear formed** of a metallic material of a steel into a **differential case formed** of nonferrous metal and integrating them with each other.

CONSTITUTION: In a differential 24, a **ring gear 26 formed** of a metallic material of a steel into a **differential case 25 formed** of nonferrous metal such as aluminum alloy and integrally molded. A window part 30 piercing in the plate thickness direction is **formed** on the outer peripheral surface of a connecting part 29 of the **differential case 25** and to be used for machining and assembling of a mounting part of the differential gear to be arranged inside the case 25. Moreover, a plurality of reinforcing ribs 33 are radially **formed** on the outer peripheral surface of the connecting part 29 from the rotary shaft core RT of the **differential case 25**. Two beating holes 35 for separating the core to be used in manufacturing are **formed** on the outer peripheral surface of the connecting part 29 so as to approximately face the window part 30.

Therefore, the manufacturing process of the differential is simplified, and the productive efficiency can be reliably improved.

20/26, TI/1 (Item 1 from file: 350)

DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
015039484
WPI Acc No: 2003-100000/200309

Planetary gear apparatus of automatic transmission has sun gear which is integrally formed to stator shaft and supported in axial hole of transmission case

20/26, TI/2 (Item 2 from file: 350)

DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
014340811
WPI Acc No: 2002-161514/200221

Transmission case structure for forklift truck, has gear storage chamber and breather attachment chamber, integrally formed in a transmission case, which are separated by partition wall

20/26, TI/3 (Item 3 from file: 350)

DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
014028841
WPI Acc No: 2001-513055/200156

Gear reducer housing, e.g. for machines designed with one or multiple reduction stages within support housing has rotating assembly supports in housing shell, and fixturing pads disposed about periphery of housing shell

20/26, TI/4 (Item 4 from file: 350)

DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
013567854
WPI Acc No: 2001-052061/200107

Gear housing especially for vehicle change-gears has bearing covers made from fine deep drawn pressed sheet metal parts with sleeve-like bushes and stud-like tops to form external and internal track faces for rolling bearings

20/26, TI/6 (Item 6 from file: 350)

DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
009887676
WPI Acc No: 1994-167591/199420

Reduced axial length epicyclic reduction gear - uses planet carrier gear case roller bearings supporting carrier and output shaft

20/26, TI/7 (Item 7 from file: 350)

DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
008978354
WPI Acc No: 1992-105623/199214

Casting drive gear housing - with integral oil circulation channel

20/26, TI/9 (Item 9 from file: 350)

DIALOG(R) File 350: Derwent WPIX

February 28, 2003

Serial 09/864064

(c) 2003 Thomson Derwent. All rts. reserv.

008519290

WPI Acc No: 1991-023374/199104

Multi-stage gearbox with finely and coarsely stepped gear groups - has intermediate gearset, with sliding coupling and parallel double gear, arranged between finely stepped group and clutch

20/26, TI/10 (Item 10 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007750139

WPI Acc No: 1989-015251/198902

Electric motor and associated gear system - has several bearing assemblies axially spaced within unitary housing, for rotatably supporting common shaft at respective points

20/26, TI/13 (Item 13 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007472267

WPI Acc No: 1988-106201/198816

Protective cover for vehicle belt or chain drive - has front connection for air under pressure to exclude dirt or moisture

20/26, TI/14 (Item 14 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

004540200

WPI Acc No: 1986-043544/198607

Worm wheel drive for motor vehicle windows - has carrier disc as plastics casting, injection moulded on driven shaft

20/26, TI/15 (Item 15 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

004044313

WPI Acc No: 1984-189855/198431

Friction clutch driven gear unit for vehicle - has shift groups and clutches forming integral group for insertion into gear housing

20/26, TI/16 (Item 16 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

003935780

WPI Acc No: 1984-081324/198413

Casing for vehicle gearbox - includes mountings for gear shafts and gear change mechanism, also reinforcing ribs formed as integral parts of casing

20/26, TI/17 (Item 17 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

003898572

WPI Acc No: 1984-044115/198408

Electric cleaning and polishing appts. - has watertight connection preventing fluid seeping into mechanical parts

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20/26, TI/19 (Item 19 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

001954914

WPI Acc No: 1978-J4185A/197843

**Pan mill driving gearbox - has single bevel and epicyclic gear trains
completely housed inside cylindrical housing****20/26, TI/21 (Item 1 from file: 347)**

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

07235783

TRANSMISSION DEVICE OF WORKING MACHINE

20/26, TI/22 (Item 2 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

06728626

INFILTRATION PREVENTING STRUCTURE OF TRANSMISSION CASE

20/26, TI/23 (Item 3 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

06141145

HYPOID GEAR TYPE SPEED REDUCTION GEAR

20/26, TI/24 (Item 4 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

05138388

GEAR MISSION CASE

20/26, TI/25 (Item 5 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

03045555

TRANSMISSION WITH AUXILIARY TRANSMISSION

20/26, TI/26 (Item 6 from file: 347)

DIALOG(R) File 347: JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

00615551

OIL LEAKAGE PREVENTING DEVICE FOR AUTOMOBILE TRANSMISSION GEAR

20/7/5 (Item 5 from file: 350)

DIALOG(R) File 350: Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012915403 **Image available**

WPI Acc No: 2000-087239/200007

Gear housing, used in worm gear drive mechanism

Patent Assignee: PRECISION PROD SYSTEMS LLC (PREC-N)

Inventor: EVANS D M

Number of Countries: 087 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9964766	A1	19991216	WO 99US11479	A	19990525	200007	B
US 6014915	A	20000118	US 9895736	A	19980611	200011	

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AU 9940973	A	19991230	AU 9940973	A	19990525	200022
BR 9911141	A	20010306	BR 9911141	A	19990525	200118
			WO 99US11479	A	19990525	
EP 1101049	A1	20010523	EP 99924487	A	19990525	200130
			WO 99US11479	A	19990525	
DE 19983280	T	20010726	DE 1083280	A	19990525	200143
			WO 99US11479	A	19990525	
CN 1309750	A	20010822	CN 99808616	A	19990525	200175
JP 2002517694	W	20020618	WO 99US11479	A	19990525	200242
			JP 2000553735	A	19990525	

Priority Applications (No Type Date): US 9895736 A 19980611

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9964766 A1 E 20 F16H-001/16

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN
CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK
SL TJ TM TR TT UA UG US UZ VN YU ZA ZWDesignated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

US 6014915 A F16H-057/02

AU 9940973 A F16H-001/16 Based on patent WO 9964766

BR 9911141 A F16H-001/16 Based on patent WO 9964766

EP 1101049 A1 E F16H-001/16 Based on patent WO 9964766

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI
LU MC NL PT SE

DE 19983280 T F16H-001/16 Based on patent WO 9964766

CN 1309750 A F16H-001/16

JP 2002517694 W 22 F16H-057/02 Based on patent WO 9964766

Abstract (Basic): WO 9964766 A1

NOVELTY - Gear housing has a back wall to support the shaft. The back wall has a cylindrical central portion for receiving one end of the output shaft.

DETAILED DESCRIPTION - Gear housing for use with a toothed gear having an output shaft comprises:

(a) a cup shaped cavity with a circular back wall and a central axis;

(b) a cylindrical recess extending through a plane orthogonal to the central axis; and

(c) annulus segments surrounding the cylindrical recess.

Each of the segments has a narrow end and a wide end, where the narrow end of alternating segments form an integral part of the recess above the plane. Segments adjacent to alternating segments with narrow ends form an integral part of the recess below the plane. Wide ends of the segments converge upon the plane.

INDEPENDENT CLAIMS are also included for the following:

(A) a **gear housing** back wall **formed** part of a **gear housing**, the back wall comprising a central portion with a central axis intersecting a plane orthogonal to the axis and annulus segments surrounding a central portion, where each of the segments have a narrow end, wide end and sides, the narrow end of alternating segments **form** an **integral** part of the central portion above the plane, segments adjacent the alternating segments having narrow ends **form** an **integral** part of the central portion below the plane and the wide end of segments converge on the plane; and

(B) a gear housing assembly for use with a window lift mechanism comprising a gear housing and gear having an output shaft concentric

with the central axis and disposed in the cavity where one end of output shaft extends into the cylindrical recess.

USE - Used for a worm gear drive mechanism, particularly for a motor vehicle window lift drive.

ADVANTAGE - The uniform wall thickness of the back wall requires less material to fabricate.

DESCRIPTION OF DRAWING(S) - The figure shows a left rear perspective view of the gear housing.

Back wall (48)

Shaft end (52)

Cylindrical central portion (64)

Annulus segment (76)

Narrow end (78)

Wide end (80)

Sides (82)

pp; 20 DwgNo 5/8

Derwent Class: A88; Q47; Q64

International Patent Class (Main): F16H-001/16; **F16H-057/02**

International Patent Class (Additional): E05F-015/16

20/7/8 (Item 8 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

008622482 **Image available**

WPI Acc No: 1991-126512/199118

Rear axle- case mfg. method - involves casting differential gear housing and axle housings into integral body from modular graphite cast iron

Patent Assignee: ISUZU MOTORS LTD (ISUZ)

Inventor: KAWAHARA T; KUWAHARA T

Number of Countries: 002 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 424992	A	19910502	EP 90124470	A	19871222	199118 B
EP 424992	A3	19920722	EP 90124470	A	19871222	199335
EP 424992	B1	19950517	EP 87118995	A	19871222	199524
			EP 90124470	A	19871222	
DE 3751309	G	19950622	DE 3751309	A	19871222	199530
			EP 90124470	A	19871222	

Priority Applications (No Type Date): EP 90124470 A 19871222

Cited Patents: NoSR.Pub; 1.Jnl.Ref; DE 3402272

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 424992	A				
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Designated States (Regional): DE GB

EP 424992	B1 E	14	B60B-035/16	Div ex application EP 87118995
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Designated States (Regional): DE GB

DE 3751309	G		B60B-035/16	Based on patent EP 424992
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Abstract (Basic): EP 424992 A

The method involved casting a mould for the end tube parts of the axle housings. It then involves cooling the end tube parts naturally or forcibly by dividing and removing those parts of the castings mould which have served the making of the end tube parts.

The method then comprises cooling other parts of the integrally cast casting in the casting mould by leaving them inside the casting mould.

USE - A method of manufacturing a rear axle case.

Dwg.1/8

Abstract (Equivalent): EP 424992 B

A method of manufacturing a rear axlecase (20) by **forming casting** mould so as to produce an **integral casting** comprising the differential **gear housing** (21) and the axle **housings** (22), each having an end tube part (26); pouring thereinto nodular graphite **cast iron** (32); characterised in that after completion of the **casting** the end tube parts (26) are cooled naturally or forcibly by dividing and removing those parts (33) of the **casting** mould (30) which have served in the making of said end tube parts (26), and the other parts of **integral casting** are cooled by leaving them inside the **casting** mould (30).

Dwg.1/8

Derwent Class: Q11

International Patent Class (Main): B60B-035/16

International Patent Class (Additional): B22D-027/04; B22D-029/00;

F16H-057/02

20/7/11 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007726332 **Image available**

WPI Acc No: 1988-360264/198850

Differential axle reduction gear housing - has pair of shafts with housing accommodating gear system for vehicles such as golf-cars made of aluminium

Patent Assignee: DANA CORP (DANC)

Inventor: KESSLER T M; SCHLOSSER K J

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4787267	A	19881129	US 86916352	A	19861007	198850 B
CA 1289388	C	19910924				199144
KR 9603133	B1	19960305	KR 8711107	A	19871005	199911

Priority Applications (No Type Date): US 86916352 A 19861007

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
-----------	------	-----	----	----------	--------------

US 4787267	A		4		
KR 9603133	B1			F16H-048/00	

Abstract (Basic): US 4787267 A

The axle **housing** contains an input shaft, an intermediate shaft, a differential **gear** assembly, and a pair of coaxially arranged axle shafts, all of which are aligned parallel to one another. The **housing** accommodates either a spur or helical **gear** system, pref. for small off-highway vehicles such as golf cars. In a preferred **form**, the **unitary housing** is die **cast** of aluminium and machined according to predetermined specifications.

The input shaft is inserted through a motor side of the housing, and is retained by a snap ring. The intermediate shaft is next installed from the bottom of the housing, and the differential and axle shafts are lastely inserted into the housing, which is then closed by a steel cover. The input shaft, the intermediate shaft, and the axle shafts are maintained parallel to one another by the unitary housing which includes sets of aligned bores.

ADVANTAGE - Provides a design bearing bores can be machined into a unitary housing, hence eliminates the bore mismatch problem and

eliminates any additional mismatch created in the bolting of the two halves together. This allow gears on the parallel shafts to consistently run much closer to their ideal or theoretical positions
Derwent Class: Q64
International Patent Class (Main): F16H-048/00
International Patent Class (Additional): F16H-001/38; F16H-037/08;
F16H-057/02

20/7/12 (Item 12 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
007550414 **Image available**
WPI Acc No: 1988-184346/198827

Motor vehicle rear axle case prodn. - is manufactured by casting differential gear housing and axle housings into integral body from modular graphite cast iron
Patent Assignee: ISUZU MOTORS LTD (ISUZ)
Inventor: KUWAHARA T

Number of Countries: 003 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 273355	A	19880706	EP 87118995	A	19871222	198827 B
US 4843906	A	19890704	US 87136318	A	19871222	198934
US 4921036	A	19900501	US 88231128	A	19880811	199022
EP 273355	B1	19920715	EP 87118995	A	19871222	199229
DE 3780434	G	19920820	DE 3780434	A	19871222	199235
			EP 87118995	A	19871222	
KR 9410618	B1	19941024	KR 8714762	A	19871223	199641

Priority Applications (No Type Date): JP 86306326 A 19861224
Cited Patents: 1.Jnl.Ref; A3...8940; DE 3402272; No-SR.Pub
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 273355	A	E	13		
US 4843906	A		11		
EP 273355	B1	E	14	B60B-035/16	
DE 3780434	G			B60B-035/16	Based on patent EP 273355
KR 9410618	B1			B60B-035/16	

Abstract (Basic): EP 273355 A

The rear axle **case** (20) is manufactured by **casting** the differential **gear housing** (21) and the axle **housings** (22) into an **integral** body from nodular graphite **cast** iron. A hardened structure part is **formed** in each of the end tubes (26) of the axle **housings** .

The hardened structure part (28) is formed by high frequency quenching. The differential gear housing and the axle housings apart from the end tubes are finished in a ductile structure.

USE/ADVANTAGE - Rear axle case which is low in hardness and is ductile to prevent fracture if deformed in the event of collisions

Abstract (Equivalent): EP 273355 B

A rear axle **case** characterised by the construction in which the differential **gear housings** and the axle **housing** are **cast** from nodular graphite **cast** iron into an **integral casting** ; and a hardened structure part is **formed** by high frequency quenching in each of the end tube parts or aforesaid axle **housings** .

Abstract (Equivalent): US 4921036 A

A rear axle **case** is manufactured by **casting** the differential **gear housing** and the axle **housings** into an **integral** body from

nodular graphite **cast** iron, and ensuring good ductility by reducing the hardness as a whole on one hand.

It also involves ensuring toughness to bear up under the stress acting on the axles by performing hardening treatment on the root parts of the end tubes of the axle housing.

US 4843906 A

The rear axle **case** , comprises a differential **gear housing** , axle **housings** and end-tubes respectively on the outer ends of the axle **housings** . The differential **gear housing** , the axle **housings** and the end tubes are integrally defined by **single casting** of nodular graphite **cast** iron. The portion of the **casing** defines the differential **gear housing** and the axle **housings** being an essentially ductile structure.

The end tubes each include a portion having increased structural hardness relative to the other portion of the casting.

ADVANTAGE - Reduced risk of fracture

Derwent Class: P53; Q11; Q64

International Patent Class (Main): B60B-035/16

International Patent Class (Additional): B22D-029/00; C21D-009/28;

F16H-057/02

20/7/18 (Item 18 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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002157885

WPI Acc No: 1979-H7829B/197937

Rotating drive with internal and external gears - has housing precision cast integrally with external gear teeth

Patent Assignee: PROMETHEUS MASCH (PROM-N)

Inventor: ZANDER F

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2809734	A	19790906				197937 B

Priority Applications (No Type Date): DE 2809734 A 19780303

Abstract (Basic): DE 2809734 A

The rotating drive has an input stage and two sets of internal sun and planetary gears for the output. The associated external central gears are integral parts of the drive housing.

The **gears** and **housing** are **cast** as an **integral** unit, with no machining subsequently required. Alternatively the external **gear** teeth can be machined in one setting.

Derwent Class: Q64

International Patent Class (Additional): **F16H-057/02**

20/7/20 (Item 20 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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001298446

WPI Acc No: 1975-J2363W/197533

I.C. engine one piece crank shaft case - incorporates differential gear wheel chamber to avoid alignment problems

Patent Assignee: TATRA NP (TATR)

Number of Countries: 003 Number of Patents: 003

Patent Family:

February 28, 2003

Serial 09/864064

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2502127	A	19750807				197533 B
CS 7400462	A	19750915				197602
GB 1489981	A	19771026				197743

Priority Applications (No Type Date): CS 74462 A 19740124

Abstract (Basic): DE 2502127 A

The differential **gear** box of a combustion engine is an **integral** part of the crank shaft **case**. It is located at one end of the crank **case** and has axial holes which enable the installation of the **gear** wheels. The cam shaft bore and the mounting face for the fuel injection pump are also part of the **casting**. Since all relevant bearing holes and mounting faces are finished during the same machining process, the problem of misalignment is eliminated.

Derwent Class: Q52; Q64; Q68

International Patent Class (Additional): F02F-007/00; **F16H-057/02** ;
F16M-001/02

20/7/24 (Item 4 from file: 347)

DIALOG(R) File 347: JAPIO

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05138388 **Image available**

GEAR MISSION CASE

PUB. NO.: 08-093888 [JP 8093888 A]

PUBLISHED: April 12, 1996 (19960412)

INVENTOR(s): YAMADA SHUNZO

APPLICANT(s): KUBOTA CORP [000105] (A Japanese Company or Corporation), JP
(Japan).

APPL. NO.: 06-227522 [JP 94227522]

FILED: September 22, 1994 (19940922)

ABSTRACT

PURPOSE: To carry out inspection of air supply and discharge and oil quantity of a gear mission case while favouring in an inspection work sphere and in a manufacturing sphere.

CONSTITUTION: A breather pipe 15 is installed on an upper part wall 12a of a **gear** mission **case** 12 free to disconnect through an oiling plug 13. An oil level gauge part 16 having an oil inspection part 16a is **formed** on an extended end part by a pipe part which extends to a bottom part in the **case** rather than a suction and exhaust port 15a in the **gear** mission **case** 12 of this breather pipe 15. Consequently, when the breather pipe 15 is removed from the transmission **case** 12 by removing the oiling plug 13, the oil level gauge part 16 is also removed with it, and inspection of the breather pipe 15 and inspection of oil quantity by the oil level gauge part 16 can be carried out at a time. It is possible to **form** the breather pipe and the oil level gauge part 16 as an **integral** part.

February 28, 2003

Serial 09/864064

File 348:EUROPEAN PATENTS 1978-2003/Feb W04

File 349:PCT FULLTEXT 1979-2002/UB=20030220,UT=20030213

Set	Items	Description
S1	78046	CAST OR CASTS OR CASTING? ?
S2	1289874	FORM OR FORMS OR FORMED OR FORMING
S3	909591	HOUSING? ? OR HUB OR HUBS OR CASING? ? OR CASE OR CASES
S4	72935	GEAR OR GEARS
S5	4279	RING() GEAR? ? OR RING() SHAPE? ?() GEAR? ?
S6	114929	DIFFERENTIAL
S7	653385	SINGLE OR UNITARY OR INTEGRAL
S8	467	IC=F16H-057/02
S9	4	IC=B21K-003/00
S10	80	S1:S2(S)S5(S)S6(2W)S3
S11	4	S10 AND S8:S9
S12	4092	S1:S2(10N)S3(10N)S4
S13	0	S8 AND S9
S14	556	S7(S)S12
S15	10	S8:S9 AND S14
S16	10	S15 NOT S11
S17	150	S7(2W)S3(10N)S4
S18	42	S12(S)S17
S19	40	S18 NOT S15

11/6/1 (Item 1 from file: 348)

01085370

Sliding part for a sliding mechanism

11/6/2 (Item 2 from file: 348)

00835344

Method and apparatus for automatically assembling side gears, pinions and pinion shaft within differential case

11/6/3 (Item 3 from file: 348)

00595167

Method and apparatus for automatically assembling side gears, pinions and pinion shaft within differential case

11/3,K/4 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00811145 **Image available**

DIFFERENTIAL

DIFFERENTIEL

Patent Applicant/Assignee:

DANA CORPORATION, P.O. Box 904, Toledo, OH 43697, US, US (Residence), US
(Nationality)

Inventor(s):

PETERSON Glen David, 2525 Tattersall Road, Protage, MI 49024, US,
MILITELLO Anthony, 24515 Willowby, East Pointe, MI 48021, US,

Legal Representative:

STAVISH Matthew W (agent), Liniak, Berenato, Longacre & White, Ste. 240,
6550 Rock Spring Drive, Bethesda, MD 20817, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200144692 A1 20010621 (WO 0144692)

Application: WO 2000US42338 20001129 (PCT/WO US0042338)

Searcher: Jeanne Horrigan
February 28, 2003
Serial 09/864064

35

Priority Application: US 99461434 19991216
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
FI GB GE GH HU IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK
MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU
ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
((OAPI utility model)) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 2000
International Patent Class: F16H-057/02
Fulltext Availability:

Claims

Claim

... in said selected position includes welding.

8 A modular unitized differential comprising:

I 0 a **differential case** provided with an annular flange having an external peripheral surface, and an outer cylindrical boss coaxial with an axis of rotation of said **differential case**; said external annular flange is **formed** 5 integrally with said flanged **differential case** half; a **ring gear** having an annular toothed portion and a concave flange portion extending inwardly from said toothed portion, said concave flange portion is integrally **formed** with said annular toothed portion; said concave flange portion has a circular central aperture receiving...

...portion is substantially equal to an external diameter of said external annular flange of said **differential case**, and an internal diameter of said circular central aperture in said concave flange portion of said **ring gear** is substantially equal to an external diameter of said outer cylindrical boss of said **differential case**, and wherein said **ring gear** is welded to said **differential case**.

9 The unitized modular differential as defined in I I claim 8, wherein said differential...

16/6/2 (Item 2 from file: 348)

00873960

Two-piece housing for compound transmission

16/6/3 (Item 3 from file: 348)

00865525

Multistage angular reducer

16/6/4 (Item 4 from file: 348)

00663163

EXTERNALLY MESHING CYLINDRICAL TOOTHED GEAR

16/6/5 (Item 5 from file: 348)

00657255

Multi-stage angle drive reduction gear box

16/6/6 (Item 6 from file: 348)

00383532

TOY VEHICLE TRANSMISSION.

16/6/7 (Item 7 from file: 348)

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Serial 09/864064

00265193

Internal combustion engine.

16/6/9 (Item 2 from file: 349)

00730710 **Image available**

PARALLEL SHAFT SPEED REDUCTION GEARING

Publication Year: 2000

16/3,K/1 (Item 1 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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01222317

Gear housing with transmission shafts supported by bearings for speed-change gearing in a vehicle

Getriebegehäuse mit in Walzlagern gelagerten Getriebewellen für Wechselgetriebe von Kraftfahrzeugen

Carter de boîte de vitesse avec palier de roulement pour arbre de transmission dans une transmission de changement de vitesse d'un véhicule

PATENT ASSIGNEE:

Ford Global Technologies, Inc., A subsidiary of Ford Motor Company,
(2449130), 911 Parklane Towers East, Dearborn, Michigan 48126, (US),
(Proprietor designated states: all)

INVENTOR:

Nett, Hans Peter, Zum Eckernbaum 14, 53518 Adenau, (DE)
Kreuer, Manfred, An der Weide 19, 50129 Bergheim, (DE)

LEGAL REPRESENTATIVE:

Messulam, Alec Mosés et al (33832), A. Messulam & Co. Ltd., 43-45 High Road, Bushey Heath, Bushey, Herts WD23 1EE, (GB)

PATENT (CC, No, Kind, Date): EP 1059470 A1 001213 (Basic)
EP 1059470 B1 011114

APPLICATION (CC, No, Date): EP 99110702 990602;

DESIGNATED STATES: DE; ES; FR; GB; IT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: F16H-057/02

TRANSLATED ABSTRACT WORD COUNT: 150

ABSTRACT WORD COUNT: 105

NOTE: Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): German; German; German

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(German)	200050	309
CLAIMS B	(English)	200146	394
CLAIMS B	(German)	200146	313
CLAIMS B	(French)	200146	431
SPEC A	(German)	200050	1051
SPEC B	(German)	200146	1051
Total word count - document A			1360
Total word count - document B			2189
Total word count - documents A + B			3549

INTERNATIONAL PATENT CLASS: F16H-057/02

...ABSTRACT rolling bearings (10, 11, 12, 13) are housed in bearing covers (6, 7) made from **single** or multi-layered pressed sheet metal parts **formed** as fine deep drawn parts and connected to the **gear housing**. The sheet metal parts have sleeve-like bushes (16) and stud-like tops (17) which **form** directly external and internal track faces (18, 19) for the needle or rolling

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bearings (12, 13) which interact with the **gear** shafts (4, 5).

A pressed sheet metal part can be **formed** as a fine drawn part provided with several deep-drawn tops (24) spaced circumferentially on...

16/3,K/8 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00786736 **Image available**

UNITARY CASE FOR AN ANGULAR DRIVE**CARTER UNITAIRE POUR UN RENVOI ANGULAIRE****EINHEITSGEHAUSE FUR EINEN WINKELTRIEB**

Patent Applicant/Assignee:

VOITH TURBO GMBH & CO KG, Alexanderstrasse 2, 89522 Heidenheim, DE, DE
(Residence), DE (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

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DE (Nationality), (Designated only for: US)

SCHIEDER Achim Paul, Schulstrasse 8, 92703 Krummennaab, DE, DE
(Residence), DE (Nationality), (Designated only for: US)

WALTER Peter, Steingasse 5, 77770 Durbach, DE, DE (Residence), DE
(Nationality), (Designated only for: US)

Legal Representative:

WEITZEL & PARTNER (agent), Friedenstrasse 10, 89522 Heidenheim, DE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200120196 A1 20010322 (WO 0120196)

Application: WO 2000EP8755 20000907 (PCT/WO EP0008755)

Priority Application: DE 29916006 19990914

Designated States: JP US

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: German

Filing Language: German

Fulltext Word Count: 4897

Main International Patent Class: **F16H-057/02**

English Abstract

The invention relates to a **unitary** case (7) for a plurality of angular drives (4), which comprises at least one bevel...

...at least indirect rotationally fixed manner. The invention is characterized by the following features: the **unitary** case is designed for a plurality of the theoretically possible angular outputs with the following...

...of the individual bevel gears is almost identically provided with identical outer dimensions -; in the **unitary case**, bearing receiving devices are assigned to the transmission output shaft and/or to the second bevel **gear**; the bearing receiving devices can be **formed** by the inner contour (21) of the **unitary case** and/or by the replaceable bearing support elements (22, 32) that are dimensioned for receiving...

16/3,K/10 (Item 3 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00533414 **Image available**

GEAR HOUSING**BOITE DE VITESSES**

Patent Applicant/Assignee:

PRECISION PRODUCTS SYSTEMS LLC,
EVANS Dale M,

February 28, 2003

Serial 09/864064

Inventor(s):

EVANS Dale M,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9964766 A1 19991216

Application: WO 99US11479 19990525 (PCT/WO US9911479)

Priority Application: US 9895736 19980611

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE

ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT

LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT

UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD

RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF

CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 2562

International Patent Class: F16H-057/02 ...

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... rotatably mounted worm wheel 18 that tangentially engages the drive shaft 12. Supports 50 integrally **formed** part of the cavity sidewall 44 prevent excessive axial and radial movement of the drive shaft 12 in the **gear housing** 16.

Through hole bosses 62 **formed** an **integral** part of the **gear housing** sidewall 44 provide attachment points for coupling the assembled motor vehicle window lift drive 10...

Claim

... as claimed in claim 14, wherein said gear is a worm wheel.

9 A gear **housing** assembly as claimed in claim 14, wherein said **gear** is rotatably driven by a worm drive shaft.

10 A **gear housing** backwall **formed** part of a **gear housing**, said backwall comprising: a central portion having a central axis intersecting a plane orthogonal to...

...end, a wide end, and sides, wherein said narrow end of alternating segments form an **integral** part of said central portion above said plane and segments adjacent said alternating segments having narrow ends form an **integral** part of said central portion below said plane, said wide end of said plurality of...

19/6/1 (Item 1 from file: 348)

01270000

Driving control apparatus for industrial vehicle

19/6/2 (Item 2 from file: 348)

01215298

Box for rotary machines with interchangeable base and embedded stiffness element

19/6/3 (Item 3 from file: 348)

01138939

Axle drivetrain having speed reduction gear unit for automotive vehicles

19/6/4 (Item 4 from file: 348)

01134208

Apparatus and method for precision gear finishing by controlled deformation

19/6/5 (Item 5 from file: 348)

February 28, 2003

Serial 09/864064

00955714

Connecting a shaft to a bore

19/6/6 (Item 6 from file: 348)

00746188

PLANETARY GEAR TYPE SPEED REDUCER

19/6/8 (Item 8 from file: 348)

00719235

CHAIN DRIVE FOR CONSTRUCTION TOY SYSTEM

19/6/9 (Item 9 from file: 348)

00690053

Twin screw extruder and torque splitting transmission

19/6/10 (Item 10 from file: 348)

00657541

Automatic transmission

19/6/11 (Item 11 from file: 348)

00652327

MOTOR INSTALLATION FOR CONSTRUCTION TOY SYSTEM

19/6/12 (Item 12 from file: 348)

00647373

GEARING AND DRIVE MECHANISM FOR CONSTRUCTION TOY SYSTEM

19/6/13 (Item 13 from file: 348)

00619047

APPARATUS AND METHOD FOR PRECISION GEAR FINISHING BY CONTROLLED DEFORMATION

19/6/14 (Item 14 from file: 348)

00598733

Connecting a shaft to a bore

19/6/17 (Item 17 from file: 348)

00406133

NON-JAMMING ROTARY MECHANICAL ACTUATOR.

19/6/18 (Item 18 from file: 348)

00356846

Differential gear.

19/6/20 (Item 20 from file: 348)

00342213

Unitary rotational speed sensor.

19/6/21 (Item 21 from file: 348)

00315472

Damping assembly for a torque converter and clutch assembly.

19/6/22 (Item 22 from file: 348)

00305055

A power train for vehicles.

19/6/27 (Item 27 from file: 348)

00238131

February 28, 2003

Serial 09/864064

Process for making a catalyst core.

19/6/28 (Item 1 from file: 349)
00895230 **Image available**

A PLANETARY GEAR APPARATUS

Publication Year: 2002

19/6/30 (Item 3 from file: 349)
00740281 **Image available**

SINGLE ROTOR EXTRUDERS

Publication Year: 2000

19/6/31 (Item 4 from file: 349)
00573939 **Image available**

A DRIVE SYSTEM FOR A VARIABLE DIAMETER TILT ROTOR

Publication Year: 2000

19/6/34 (Item 7 from file: 349)
00272008 **Image available**

MOTOR INSTALLATION FOR CONSTRUCTION TOY SYSTEM

Publication Year: 1994

19/6/35 (Item 8 from file: 349)
00269714 **Image available**

GEARING AND DRIVE MECHANISM FOR CONSTRUCTION TOY SYSTEM

Publication Year: 1994

19/6/36 (Item 9 from file: 349)
00256145 **Image available**

APPARATUS AND METHOD FOR PRECISION GEAR FINISHING BY CONTROLLED DEFORMATION

Publication Year: 1994

19/6/38 (Item 11 from file: 349)
00156483

NON-JAMMING ROTARY MECHANICAL ACTUATOR

Publication Year: 1989

19/3,K/7 (Item 7 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00734671

Differential gear

Differentialgetriebe

Transmission differentielle

PATENT ASSIGNEE:

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Tochigi-shi, Tochigi-ken, (JP), (Proprietor designated states: all)

INVENTOR:

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Yamazaki, Shinji, c/o Tochigi Fuji Sangyo K.K., 2388 Ohmiya-cho,

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Ono, Shuhei, c/o Tochigi Fuji Sangyo K.K., 2388 Ohmiya-cho, Tochigi-shi,

Tochigi-ken, (JP)

Searcher: Jeanne Horrigan
February 28, 2003
Serial 09/864064

41

LEGAL REPRESENTATIVE:

Grunecker, Kinkeldey, Stockmair & Schwanhausser Anwaltssozietat (100721)
, Maximilianstrasse 58, 80538 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 692654 A1 960117 (Basic)
EP 692654 B1 000112

APPLICATION (CC, No, Date): EP 95110813 950711;

PRIORITY (CC, No, Date): JP 94160381 940712

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: F16H-048/28

ABSTRACT WORD COUNT: 165

NOTE: Figure number on first page: 5

LANGUAGE (Publication, Procedural, Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200002	475
CLAIMS B	(German)	200002	547
CLAIMS B	(French)	200002	625
SPEC B	(English)	200002	9799

Total word count - document A 0

Total word count - document B 11446

Total word count - documents A + B 11446

...SPECIFICATION examples which cannot provide wide openings on the side wall portions.

Moreover, in the differential gear 401, two large windows 519 are formed on the differential gear case 409 in order to assemble the side gears 433 and 435, which has a disadvantage in the strength. In addition, the integral differential gear case 409 on which the housing holes 449 and 451 are formed has a complicated shape, and is hard to be heat-treated. Furthermore, the method to machine the complicated differential gear case 409 having such a shape is restricted to, for example, casting or forging, and the precise finishing process of the supporting portions 521 and 521 of side gears 433 and 435 is difficult.

Furthermore, in the spacer 507 of the differential gear 403, there is formed a part of the housing holes 453 and 455, and the mesh portion of the pinion gears 421 and 423 is supported spreading over two members, the differential gear case 411 and the spacer 507.

Accordingly, if there is a slight machining error of the...

19/3,K/15 (Item 15 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00555220

DIFFERENTIAL UNIT

DIFFERENTIALGETRIEBE

DIFFERENTIEL

PATENT ASSIGNEE:

GROUP LOTUS LIMITED, (587251), Hethel, Norwich Norfolk NR14 8EZ, (GB),
(applicant designated states: DE;ES;FR;GB;IT;SE)

INVENTOR:

MACE, Graham Henry, 38 Kenton Way, Langdon Hills, Basildon, Essex, (GB)
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LEGAL REPRESENTATIVE:

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February 28, 2003

Serial 09/864064

PATENT (CC, No, Kind, Date): EP 565573 A1 931020 (Basic)
EP 565573 B1 951122
WO 9212361 920723

APPLICATION (CC, No, Date): EP 92902185 920108; WO 92GB35

PRIORITY (CC, No, Date): GB 9100382 910109

DESIGNATED STATES: DE; ES; FR; GB; IT; SE

INTERNATIONAL PATENT CLASS: F16H-048/10

NOTE: No A-document published by EPO

LANGUAGE (Publication, Procedural, Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9905	1053
CLAIMS B	(German)	9905	962
CLAIMS B	(French)	9905	1120
SPEC B	(English)	9905	3478

Total word count - document A 0

Total word count - document B 6613

Total word count - documents A + B 6613

...SPECIFICATION exploded sectional view of the second embodiment of the differential unit.

The differential unit 40 of Figure 1 comprises a differential gear carrier in the form of a housing 42 with an integral end plate and an outwardly extending hub 46. An end plate 45 is secured to the housing 42, the end plate 45 comprising another outwardly extending hub 46. The carrier can be rotatably driven about an axis 47 common to the housing 42 and the end plate 45, by means of gear teeth 49 provided on an outer peripheral ring gear 44 secured to the housing 42.

The gear carrier contains within it the left hand end as shown in Figure 1, an output gear 51 having a hub portion, (not shown) around a central aperture extending outwardly into the larger diameter bearing portion 46 of the aperture of the...

19/3,K/24 (Item 24 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00265215

A rear axlecasse and methods of manufacturing thereof.

Hinterachsgehäuse und dessen Herstellung.

Carter d'essieu arriere et sa production.

PATENT ASSIGNEE:

Isuzu Motors Limited, (493871), 10-go, 22-ban, 6-chome, Minami-Ohi
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INVENTOR:

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PATENT (CC, No, Kind, Date): EP 273355 A2 880706 (Basic)
EP 273355 A3 891004
EP 273355 B1 920715

APPLICATION (CC, No, Date): EP 87118995 871222;

PRIORITY (CC, No, Date): JP 86306326 861224

DESIGNATED STATES: DE; GB

INTERNATIONAL PATENT CLASS: B60B-035/16; C21D-009/28;

ABSTRACT WORD COUNT: 79

February 28, 2003

Serial 09/864064

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS B	(English)	EPBBF1	375
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CLAIMS B	(German)	EPBBF1	155
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CLAIMS B	(French)	EPBBF1	219
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SPEC B	(English)	EPBBF1	2482
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Total word count - document A	0
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Total word count - document B	3231
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Total word count - documents A + B	3231
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...SPECIFICATION difficulties were made by resorting to a construction, in which aforesaid plural members were all **cast** into one integral body from a **cast** steel, or else, the **differential gear housing** 2 and the axle **housing** 3 were **cast** into one **integral body** from **cast** steel, and **brackets** 6 and **the** likes were attached thereto by **means** of bolts or welding, to be assembled into a complete rear axlecase 1...

FILE 'ITRD, 1MOBILITY, 2MOBILITY, CONF, CONFSCI, ELCOM' ENTERED AT
10:12:09 ON 28 FEB 2003

L1 8564 S CAST OR CASTS OR CASTING OR CASTINGS
L2 58488 S FORM OR FORMS OR FORMED OR FORMING
L3 4636 S HOUSING OR HOUSINGS OR HUB OR HUBS OR CASING OR CASINGS
L4 60429 S CASE OR CASES
L5 4511 S GEAR OR GEARS
L6 60220 S SINGLE OR UNITARY OR INTEGRAL?
L7 38 S RING GEAR OR RING GEARS
L8 43 S RING (2W) GEAR OR RING (2W)GEARS
L9 16300 S DIFFERENTIAL
L10 43 S L7 OR L8
L11 25 S L9 (2W) (L3 OR L4)
L12 0 S L10 AND L11
L13 14 S (L1 OR L2) AND L3 AND L5
L14 2 S L6 AND L13
L15 12 S L13 NOT L14
L16 12 DUPLICATE REMOVE L15 (0 DUPLICATES REMOVED)

FILE 'DKF' ENTERED AT 10:18:24 ON 28 FEB 2003

L17 588 S L1
L18 4 S (L1 OR L2) AND (L3 OR L4) AND L5
L19 0 S (L7 OR L8) AND L9(2W) (L3 OR L4)

FILE 'ITRD, 1MOBILITY, 2MOBILITY, CONF, CONFSCI, ELCOM' ENTERED AT
10:21:06 ON 28 FEB 2003

L20 33 S (L1 OR L2) AND L4 AND L5
L21 32 S L20 NOT L13
L22 1 S L6 AND L21
L23 31 S L21 NOT L22
L24 31 DUPLICATE REMOVE L23 (0 DUPLICATES REMOVED)

L14 ANSWER 1 OF 2 ITRD COPYRIGHT 2003 OECD

ACCESSION NUMBER 274271 ITRD FILE SEGMENT Publications
TITLE PORE-FREE ALUMINUM WHEELS AND OTHER O.E.
CASTINGS

AUTHOR LAPSYS, A.L. (PEAT MANUFACTURING COMPANY)
SOURCE SAE TECHNICAL PAPER 830017 (1983) p. 7. 3 refs.,
Published by: SOCIETY OF AUTOMOTIVE ENGINEERS,
INCORPORATED

PUBLISHER SOCIETY OF AUTOMOTIVE ENGINEERS, INCORPORATED, 400
COMMONWEALTH DRIVE, 15096, WARRENDALE, PENNSYLVANIA,
USA

DOCUMENT TYPE Report
COUNTRY United States
LANGUAGE English

AVAILABILITY From: SOCIETY OF AUTOMOTIVE ENGINEERS, INC

AN 274271 ITRD FS Publications

AB USE OF HIGHLY STYLED ALUMINUM WHEELS AND ALUMINUM ***CASTINGS*** FOR
VARIOUS CHASSIS COMPONENTS HAS DRAMATICALLY INCREASED IN THE O.E.
COMMUNITY DUE TO THE STYLING AND WEIGHT REDUCTION OPPORTUNITIES
AFFORDED.

THE PROCESSES HISTORICALLY CONSIDERED FOR ALUMINUM CHASSIS COMPONENTS
HAVE BEEN FORGINGS, PERMANENT MOLD ***CASTINGS*** (LOW PRESSURE AND
GRAVITY) AND OCCASIONALLY HIGH PRESSURE DIE ***CASTINGS***. THE
ADVENT OF THE PORE-FREE PROCESS IN THE UNITED STATES AFFORDS THE DESIGN
ENGINEER A NEW TECHNOLOGY THAT COMBINES THE BENEFITS OF HIGH STRENGTH,
ABILITY TO HEAT TREAT, ABSENCE OF GAS POROSITY, WELDABILITY AND A HIGH

February 28, 2003

Serial 09/864064

DEGREE OF DIMENSIONAL ACCURACY IN A ***SINGLE*** PROCESS. BASIC
WORK

OVER THE PAST TWO YEARS HAS RESULTED IN A U.S. TALENT-BASED PORE-FREE
DIE ***CASTING*** PROCESS CAPABLE OF PRODUCING HIGH ELONGATION, HIGH
ULTIMATE AND YIELD STRENGTH, HYDROSTATICALLY SOUND AND DIMENSIONALLY
PRECISE ***CASTINGS*** SUITABLE FOR STYLED WHEELS, VARIOUS STRESSED
CHASSIS COMPONENTS AND PRESSURIZED VESSELS SUCH AS POWER STEERING
GEAR ***HOUSINGS*** AND PUMP BODIES--ALL AT COMPARABLE OR
LOWER COST THAN WITH CURRENT PRODUCTION METHODS. INTERNATIONAL CONGRESS
AND EXPOSITION, DETROIT, MICHIGAN, FEBRUARY 28-MARCH 4, 1983.

L16 ANSWER 3 OF 12 IMOBILITY COPYRIGHT 2003 SAE

AN 2001:925 IMOBILITY

TI Newly developed P/M materials to replace malleable and ductile
cast irons

L16 ANSWER 4 OF 12 IMOBILITY COPYRIGHT 2003 SAE

AN 2000:2789 IMOBILITY

TI ***Gear*** selection, sizing, and detail design considerations

L16 ANSWER 6 OF 12 IMOBILITY COPYRIGHT 2003 SAE

AN 93:1271 IMOBILITY

TI 42LE electronic four-speed automatic transaxle

L16 ANSWER 7 OF 12 IMOBILITY COPYRIGHT 2003 SAE

AN 91:898 IMOBILITY

TI Diagnosis and objective evaluation of ***gear*** rattle

L16 ANSWER 8 OF 12 IMOBILITY COPYRIGHT 2003 SAE

AN 90:248 IMOBILITY

TI Welded steel tube transmission components

L16 ANSWER 11 OF 12 ITRD COPYRIGHT 2003 OECD

AN 257143 ITRD

TI WHAT'S NEW IN MATERIALS FOR '81 CARS

L16 ANSWER 12 OF 12 ITRD COPYRIGHT 2003 OECD

AN 249113 ITRD

TI BENDING MEASUREMENTS ON A GEARBOX FOR A FRONT-WHEEL DRIVE VEHICLE

L18 ANSWER 2 OF 4 DKF COPYRIGHT 2003 DKF

AN 199210092819 DKF

TI Einfluss des Schwefelgehaltes mit unterschiedlicher Sulfidausbildung auf
die Waelz- und Zahnfussdauerfestigkeit einsatzgehaerteter Zahnraeder
Influence of sulfur with different sulfide ***forms*** to
gear and root-strength of ***case*** hardened
gears.

L18 ANSWER 3 OF 4 DKF COPYRIGHT 2003 DKF

AN 198705058096 DKF

TI Einfluss des Schwefelgehaltes mit unterschiedlicher Sulfidausbildung auf
die Waelz- und Zahnfussdauerfestigkeit Einsatzgehaerteter Zahnraeder
Influence of sulfur content with different sulfid ***forms*** on the
roll and tooth shoulder load capacity of ***case*** -hardened
gear wheels.

L18 ANSWER 1 OF 4 DKF COPYRIGHT 2003 DKF
ACCESSION NUMBER: 199808134499 DKF
ORDER NUMBER: 9808DKF134499
TITLE: Auch zum Fliegen geeignet. Lasergesinterte Giesskerne fuer ein Hochleistungstriebwerk sind schnell verfuegbar - die Qualitaet des Giessteils genuegt den betrieblichen Anforderungen
Rapid prototyping ***gear*** ***casing***
cast core.
AUTHOR: Seitz, S.
CORPORATE SOURCE: P:DTM,Hilden,DE
SOURCE: Form+Werkzeug / Beiblatt C.Hanser Fach-ZS; (1998)1; p.
61-62, pp. 2, Foto 4; Original bei/available from DKF
CODEN: FWEUG
DOCUMENT TYPE: Zeitschrift; Journal
COUNTRY: Bundesrepublik Deutschland; Germany, Federal Republic of
LANGUAGE: Deutsch; German
AB Die zeitlichen und qualitativen Vorgaben der Luftfahrtindustrie sind fuer
die Zulieferer Herausforderungen, die neue Loesungen verlangen. Das Treibstoffkontrollsystem fuer ein Flugzeugtriebwerk erforderte ein komplexes Gehaeuse. Die schnelle Herstellung des entsprechenden Giesskerns wurde durch die Kombination konventioneller Verfahren mit dem Selektiven Laser Sintern realisiert. Der Artikel beschreibt den Ausgangspunkt der Verfahrensentwicklung, das Sintern mit Croning Sand sowie die Vorteile des neuen Verfahrens, die in einer halbierten Entwicklungszeit bei nur 20% der Kosten liegen.

L18 ANSWER 4 OF 4 DKF COPYRIGHT 2003 DKF
ACCESSION NUMBER: 198603052939 DKF
ORDER NUMBER: 8603DKF52939
TITLE: Entwicklung von Konstruktions- und Fertigungsrichtlinien zur optimalen Gestaltung und Herstellung geschweisster, einsatzgehaerteter Grosszahnraeder
Development of design and manufacturing guidelines
for
optimal ***form*** and production of welded and
case hardened ***gears*** with great
dimensions.
AUTHOR: Florian, W.; Jaenicke, B.; Becker, G.W.
CORPORATE SOURCE: Bundesanstalt fuer Materialpruefung (BAM)
SOURCE: FVA-Forsch.-Rep., Teil 1; *; 1985; *; Forsch.-Rep.d. Forschungsvereinigung Antriebstechnik; p. 1-48, pp. 48, Zeichng./drwgs. 14, Diagr. 17, Tab. 14, Ref. 4
DOCUMENT TYPE: Report
COUNTRY: Bundesrepublik Deutschland; Germany, Federal Republic of
LANGUAGE: Deutsch; German
AB Aufgabe des Forschungsvorhabens ist die Erarbeitung von Konstruktions- und Fertigungsrichtlinien zur optimalen Gestaltung und Herstellung geschweisster und einsatzgehaerteter Grosszahnraeder.
Schwerpunkt: Grundwerkstofffragen, geeignete Schweissgueter, Nahtvorbereitung und Schweissverfahren, Schwingfestigkeit

einsatzgehaerteter Schweissverbindungen, Festigkeitsaussage.

L22 ANSWER 1 OF 1 IMOBILITY COPYRIGHT 2003 SAE
AN 1999:5512 IMOBILITY
TI ***Gear*** transmission error outside the normal path of contact due to corner and top contact

L24 ANSWER 2 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 2000:1085 IMOBILITY
TI ***Gears*** for demanding applications. A comparison between
cast iron, wrought steels and P/M steels

L24 ANSWER 5 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 2000:2617 IMOBILITY
TI Powder metallurgy (PM)--The process and possibilities

L24 ANSWER 6 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 1999:3255 IMOBILITY
TI Valve train light weight components--Potential for new materials

L24 ANSWER 13 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 89:935 IMOBILITY
TI Application of shot peening for automotive components

L24 ANSWER 16 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 85:1556 IMOBILITY
TI Opportunities for laser treatment in the automotive industry

L24 ANSWER 17 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 85:897 IMOBILITY
TI Design guidelines for high-capacity bevel ***gear*** systems

L24 ANSWER 21 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 84:726 IMOBILITY
TI Fundamentals of ***gear*** stress/strength relationships--materials

L24 ANSWER 23 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 82:109 IMOBILITY
TI High temperature carburizing steel bars for saving energy consumption in the automobile industry

L24 ANSWER 24 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 75:601 IMOBILITY
TI A new five-speed manual transmission for passenger cars

L24 ANSWER 25 OF 31 IMOBILITY COPYRIGHT 2003 SAE
AN 74:662 IMOBILITY
TI Metal-working capability of a high power laser